ANNUAL MANAGEMENT REPORT
YUKON AREA, 1996

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Regional Information Report[1] No. 3A97-41

Alaska Department of Fish and Game
Commercial Fisheries Management and
Development Division, AYK Region
333 Raspberry Road
Anchorage, Alaska 99518

November 1997

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IN MEMORY OF RANDY KACYON

Randall Henderson Kacyon
September 4, 1956 - November 30, 1996

This Yukon Area annual management report is dedicated to the memory of Randall "Randy" H. Kacyon who died in an aircraft accident while surveying moose near Marshall on November 30, 1996. Randy was employed by the Alaska Department of Fish and Game, Division of Wildlife Conservation, in Bethel as the area biologist for Game Management Unit 18.

Randy was born September 4, 1956 in Berwick, Pennsylvania. Randy attended college at both Sheldon Jackson in Sitka and the University of Alaska Fairbanks. He began working for ADFG seasonally in 1976. Randy initially began working in the Yukon-Kuskokwim Delta as a permanent seasonal Fishery Biologist I in the Lower Yukon Area from 1986 through 1989. He worked at the Middle Mouth test fishing site and in the department's field office at Emmonak. In 1989, Randy was hired as a Wildlife Conservation Biologist in Bethel. Randy was extremely well liked and respected by his coworkers and the local people of the Yukon-Kuskokwim Delta. He was a dedicated biologist, hunter, and fishermen. It was a pleasure working and living with Randy in Emmonak. He was our friend and we will miss him. Our thoughts will be with his wife Georgina and son Jeremiah.

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Sponsorship

This investigation was partially funded by Yukon River Salmon U.S./Canada Negotiation Studies grant Award No. NA46FP0343-2 from the U.S. Department of Commerce.

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PREFACE

This report is one of a series of annual management reports detailing the management activities of the Division of Commercial Fisheries Management and Development in the Yukon Area. Data presented in this report supersedes information found in previous management reports. For example, the historical subsistence salmon harvests for the village of Shageluk were moved from District 4 to District 3 in this report (Appendix A.19-A.22 and Appendix D.1 -D.4) and a formula on the last page of the total utilization table for coho salmon (Appendix A.22) was corrected in this report. The 1960-1974 management reports for the Yukon Area appear in the Arctic-Yukon-Kuskokwim Area report series. The 1975-1986 management reports appear in the Yukon Area Annual Report series. The annual management report became a part of the Regional Information Report Series in 1987. Data from selected research and monitoring projects are summarized in this report. The report is organized into the following major sections:

1. Salmon Fishery. This section presents a description of the area, fishery resources, fisheries and management practices.

2. Area Salmon Report. This section presents a comprehensive report of the current year salmon fisheries and makes comparisons with previous years.

3. Cape Romanzof District Herring Fishery. This section presents a description of the area, fishery resources, fisheries and management practices, and summary of the current year herring fishery.

4. Other Marine and Freshwater Finfish Fisheries. This section presents a description of the fishery resources and finfish fisheries other than salmon and herring.

In order to facilitate use of this report, tabular data has been separated into current year tables for the salmon fishery and appendices where historical salmon data and herring and freshwater finfish data are presented.

Catch-per-unit-effort (CPUE) is obtained by dividing the total fishermen hours into the catch for the corresponding period of time. Commercial fishing effort has been computed, assuming that if a permit holder delivers in a given fishing period, the fisherman fished the entire period for as many hours as were open to commercial fishing. Total fishermen is the total number of fishermen making deliveries, regardless of how many deliveries were made or periods fished during a particular "season". There are fishermen who deliver only once or twice during the entire season.

YUKON AREA INTRODUCTION

The Division of Commercial Fisheries Management and Development (CFMD) of the Alaska Department of Fish and Game (ADF&G) is responsible for the management of commercial, personal use, and subsistence fisheries in the Yukon Area. This annual management report details the activities of the CFMD Division in the Yukon Area during 1996.

The Yukon Area includes all waters of the Yukon River drainage in Alaska and all coastal waters from Point Romanof near Kotlik southward to Naskonat Peninsula (Figure 1). Important subsistence and commercial fisheries include salmon and herring. Other marine and freshwater finfish are harvested primarily for subsistence use. A list of indigenous fishes found in the Yukon Area is provided in Appendix A.1.

SALMON FISHERY

Description of Area and District Boundaries

The Yukon River is the largest river in Alaska, draining approximately 35 percent of the state, and is the fifth largest drainage in North America. The river originates in British Columbia, Canada, within 30 miles of the Gulf of Alaska and flows over 2,300 miles to its mouth on the Bering Sea, draining an area of approximately 330,000 square miles. With the possible exception of a few fish taken near the mouth or adjacent coastal villages, only salmon of Yukon River origin are harvested in the Yukon Area.

Excluding the greater Fairbanks area (approximately 77,000 residents), there are approximately 10,000-15,000 rural residents in the Alaskan portion of the drainage, the majority of whom reside in 43 small villages scattered along the coast and major river systems. Nearly all of these people are dependent to varying degrees on fish and game resources for their livelihood.

Commercial salmon fishing occurs along the entire 1,200 mile length of the mainstem Yukon River in Alaska and the lower 225 miles of the Tanana River. The Yukon Area is divided into seven districts and ten subdistricts for management and regulatory purposes (Figure 2). The present district boundaries were originally established in 1961 and redefined in 1962, 1974, 1978, and 1994. The Coastal District was established in 1994 and is only open to subsistence fishing. The Lower Yukon Area (Districts 1, 2, and 3) includes coastal waters of the delta and that portion of the Yukon River drainage from the mouth to Old Paradise Village, river mile 301. The Upper Yukon Area (Districts 4, 5, and 6) is that portion of the drainage upstream of Old Paradise Village to the U.S./Canada border. The districts and subdistricts are further divided into 28 statistical areas for management and reporting purposes (Figures 3-8). Figures 9-13 show selected closed waters areas. Yukon River mileages are listed in Appendix A.2.

In addition, commercial, Aboriginal, sport, and domestic salmon fisheries occur in Canada, with fishery management activities conducted by the Canadian Department of Fisheries and Oceans (DFO).

Fishery Resources

Five species of Pacific salmon are found in the Yukon River drainage: chinook salmon (*Oncorhynchus tshawytsha*), chum salmon (*O. keta*), coho salmon (*O. kisutch*), pink salmon (*O. gorbuscha*), and sockeye salmon (*O. nerka*).

Chinook salmon are the largest species found in the Yukon River ranging from 2-90 pounds and averaging 20-25 pounds. Spawning populations of chinook salmon have been documented throughout the Yukon River drainage from the Archuelinguk River located approximately 80 miles from the mouth to as far upstream as the headwaters of the drainage in Yukon Territory and British Columbia, Canada, nearly 2,000 miles from the mouth (Figures 14-18). Chinook salmon begin entering the mouth of the Yukon River soon after ice breakup during late May and early June and continue through mid-July.

The chum salmon return is made up of an early (summer chum) run and a later (fall chum) run. Summer chum salmon are chiefly characterized by: earlier run timing (early June to mid-July at the mouth), rapid maturation in freshwater, smaller size (average 6-7 pounds), and larger population size. Summer chum salmon spawn primarily in run-off streams in the lower 500 miles of the drainage and in the Tanana River drainage (Figures 14-16). Fall chum salmon are mainly distinguished by: later run timing (mid-July to early September at the mouth), robust body shape and bright silvery appearance, larger size (average 7-8 pounds) and smaller population size. Fall chum salmon primarily spawn in the upper portion of the drainage in streams which are spring fed, usually remaining ice-free during the winter. Major fall chum salmon spawning areas include the Tanana, Chandalar, and Porcupine River systems, as well as various streams in Yukon Territory, Canada, including the mainstem Yukon River (Figures 16-18).

Coho salmon enter the Yukon River from late July through September and average about seven pounds in weight. Coho salmon spawn discontinuously throughout the Alaskan portion of the drainage primarily in tributaries in the lower 500 miles of the drainage and in the Tanana River drainage. Major spawning populations of coho salmon have been documented in tributaries of the Tanana River drainage, and the Andreafsky and Anvik Rivers (Figures 14 and 16).

Pink salmon enter the lower river from late June to late July and average approximately 3 pounds in weight. Pink salmon primarily spawn in the lower portion of the drainage, downstream of the village of Grayling, river mile 336 (Figure 14). However, pink salmon have been caught in the mainstem Yukon River upstream as far as Ruby (river mile 601) (ADF&G 1983). During the past decade, large runs of pink salmon have occurred during even-numbered years.

Sockeye salmon are uncommon in the Yukon River drainage with only a few individuals caught each year. Sockeye salmon have been reported in the mainstem Yukon River upstream to Rampart (river mile 763). There have been observations of sockeye salmon in the Innoko (ADF&G 1986), Kantishna (L. Barton, ADF&G, Fairbanks, personal communication 1988), Anvik (M. Erickson, ADF&G, Anchorage, personal communication 1989) and Andreafsky (Tobin and Harper 1995) River drainages.

Water Quality

Water quality and spawning habitats in the Yukon Area have been largely preserved in an undisturbed condition. Pollution, logging, dam construction, oil development, and mining activities, except in a few locations, have been to date minimal.

Management

Management of the Yukon River salmon fishery is complex because of the difficulty in determining run size and timing, harvesting of mixed stocks, overlapping multispecies salmon runs, allocation issues, and the immense size of the Yukon River drainage. The overall goal of the Yukon Area research and management programs is to manage the salmon runs for sustained yield under the policies set forth by the Alaska Board of Fisheries.

Escapement levels required to produce maximum sustained yields cannot be determined at this time due to the lack of an adequate database. Subsistence fishing has been designated by the Alaska State Legislature and the Alaska Board of Fisheries as the highest priority among beneficial uses of the resource. Management of the Yukon River salmon fisheries must take a conservative approach to maintain the subsistence priority, and to provide for spawning area escapements to sustain production of the resource.

Fisheries within the Yukon River drainage may harvest salmon stocks that are up to several weeks and hundreds of miles from their spawning grounds. Since the Yukon River commercial fishery is a mixed stock fishery, some tributary populations may be under- or over harvested in relation to their actual abundance. It is impossible to manage the stocks separately based on current knowledge.

Primary management tools used to manage the commercial salmon harvest are guideline harvest ranges established by the Alaska Board of Fisheries (Table 1), and emergency order authority, which is used to implement fishing season openings and closures, fishing periods, and mesh size restrictions. Guideline harvest ranges have been established for chinook, summer chum, and fall chum salmon commercial fisheries throughout the Alaskan portion of the drainage. In general, the department attempts to manage the commercial fisheries such that the harvest in each district or subdistrict is proportionally similar within their respective guideline harvest ranges.

New regulations and changes to existing regulations for the Yukon Area adopted by the Alaska Board of Fisheries in March 1996 are shown in Attachment 1.

During the fishing season, management is based on preseason projections and inseason run assessment. The salmon runs are monitored on a daily basis. Inseason run assessment includes abundance indices from test fisheries, passage estimates from the Pilot Station sonar project, and spawning escapement and harvest data. Recent improvements at the main river sonar project at Pilot Station have improved inseason estimates of salmon passage for fisheries management. If it becomes apparent that the run is substantially smaller or larger than needed for escapement and subsistence requirements, then the commercial harvest rates can be adjusted through the use of emergency orders. Emergency order announcements are broadcast during the fishing season over various radio stations throughout the drainage.

The department operates several projects to obtain the biological information necessary for management of the salmon runs. Additional programs are operated by federal agencies, native organizations, and fishermen's groups. In 1996, the following projects were implemented:

1. Test Fishing. Department test fishing projects located at South, Middle and North Mouths utilized set gillnets from late May through late August to capture chinook, chum, and coho salmon to provide run timing, age composition, and an index of relative abundance for annual comparisons between years. A contract fisherman operated a test fish wheel near Nenana on the Tanana River during July, August, and September to monitor chinook, summer chum and fall chum salmon passage. To index the fall chum salmon run, Bering Sea Fishermen's Association (BSFA) funded test fish wheels on the north and south banks of mainstem Yukon River near Tanana village. Additionally, BSFA funded a drift test fishery near Mt. Village to index the fall chum salmon run. Two Yukon River test fish wheels located near the village of Fort Yukon were funded by the Council of Athabascan Tribal Governments to index fall chum salmon.

2. Tributary Sonar Projects. Hydroacoustic equipment was operated in the Anvik River (summer chum), Sheenjek River (fall chum) and Toklat River (fall chum) to estimate salmon escapements. The United

States Fish and Wildlife Service (USFWS) operated hydroacoustic equipment in the Chandalar River to estimate fall chum salmon escapement.

3. Main River Sonar Projects. Training with hydroacoustic equipment was conducted in the mainstem Yukon River near Pilot Station in 1996.

4. Stock Separation and Age Composition. Scale, fin ray, and vertebra samples were collected from salmon harvest and escapement to determine age composition of the 1996 runs. Scale samples of chinook were also utilized for the purpose of allocating the harvest to region of spawning using scale pattern analysis techniques.

5. Data Processing of Commercial Fishery Statistics. Lower Yukon Area commercial harvest and effort data were obtained from fish tickets at the Emmonak field office. Similarly, Upper Yukon Area commercial harvest and effort data were collected at the Fairbanks office.

6. Aerial and Ground Surveys of Salmon Spawning Streams. Aerial surveys were flown to monitor spawning escapements in major index streams throughout the drainage. Additionally, fall chum salmon foot surveys were conducted at selected areas in the Tanana River drainage. Tanana Chiefs Conference (TCC) and BSFA conducted aerial, boat, and ground surveys in the Nenana River drainage primarily to estimate coho salmon escapement.

7. Tagging Projects. A salmon tagging project was conducted by DFO to estimate harvest rates and total escapement of chinook and fall chum salmon in the Canadian mainstem Yukon River. ADF&G and BSFA conducted a tagging project on the Tanana River to estimate fall chum salmon abundance upriver of the confluence of the Kantishna River. USFWS initiated a fall chum salmon tagging project in the mainstem Yukon River near Rampart and investigated the feasibility of utilizing radio tags.

8. Tower Projects. Tower counting projects were conducted by ADF&G Sport Fish Division on the Chena and Salcha Rivers to estimate chinook and summer chum salmon escapements to those streams. Cooperative counting tower projects were operated on the Nulato River (Nulato Tribal Council, BSFA, and ADF&G) and Clear Creek (BLM, BSFA, and USFWS), a tributary of the Hogatza River, to estimate chinook and summer chum salmon escapement. The Alaska Cooperative Extension Service and BSFA operated a tower to estimate summer chum salmon escapement in Kaltag Creek.

9. Weir Projects. USFWS operated weirs on the East Fork Andreafsky, Gisasa, and South Fork Koyukuk Rivers to estimate salmon escapement. The department operated a weir on Barton Creek in the Toklat River drainage to estimate coho and fall chum salmon escapement. BLM operated a weir on Beaver Creek to estimate chinook and summer chum salmon escapement.

10. Subsistence Harvests. Subsistence surveys were conducted where subsistence and personal use permits are not required to estimate subsistence salmon fishery harvest and effort throughout the Yukon Area.

CFMD permanent full time staff assigned to the Yukon Area include eight positions: two area management biologists, two assistant area management biologists, three research project biologists, and one field office assistant. In addition, approximately 30 seasonal employees are hired annually to assist in conducting various management and research projects. The staff aids in the enforcement of regulations in cooperation with the Division of Fish and Wildlife Protection (FWP), Department of Public Safety.

State of Alaska funding for the Yukon Area salmon management and research program from July 1, 1995 through June 30, 1996 approximated $1.2 million. An additional $626,000 was allocated by the Federal

Government to address research issues and travel associated with U.S./Canada Yukon River salmon treaty negotiations, Yukon River Panel activities, and implementation of the Interim Agreement.

Alaskan Salmon Fishery Description

Commercial Fishery

The first recorded commercial salmon harvest in the Alaskan portion of the Yukon River drainage occurred in 1918. Relatively large harvests of chinook, chum, and coho salmon were taken during 1919-1921 (ADF&G 1985). The majority of these harvests were taken outside of the river mouth since catch restrictions were imposed within the river. The early commercial fishery met opposition and was closed during 1925-1931 because of concerns for the existing large subsistence fishery. Commercial fishing for chinook salmon was resumed at a much reduced level in 1932. A commercial fishery for chinook salmon has occurred annually since 1932. Commercial harvests of chum and/or coho occurred during 1918-1921, 1952-1954, 1956, and since 1961.

During 1954-1960, a 65,000 chinook salmon quota was in effect for the Alaskan portion of the river. Of this total, not more than 50,000 fish could be taken below the mouth of the Anuk River, 10,000 fish in the area between the mouths of the Anuk and Anvik Rivers and 5,000 fish upstream from the Anvik River. The current guideline harvest ranges have been in effect since 1981. Chinook salmon commercial harvests began increasing during the late 1970s (Appendix A.4), because of increased efficiency of the fleet and, in some years, due to above average run strength. Concern for possible over-exploitation particularly on upper river stocks, resulted in reduced harvests during the late 1980s.

Summer chum salmon commercial harvests increased greatly during the 1980s as a result of regulation changes (e.g. mesh size specifications and earlier openings), greater availability of processing facilities and tendering, higher exvessel prices, development of Japanese markets, and the occurrence of several very large runs (Appendix A.5). In February 1990, the Board of Fisheries established a river-wide guideline harvest range of 400,000 to 1,200,000 summer chum salmon. The board established guideline harvest ranges for districts and subdistricts using the 1975-1989 average harvest shares. Summer chum salmon commercial harvests declined from 1990 through 1993 because of below average runs. Beginning in 1994, declining salmon flesh markets limited the harvest particularly in the lower river. In March 1994, the Alaska Board of Fisheries adopted the Anvik River Chum Salmon Fishery Management Plan, which established regulations allowing for a commercial summer chum salmon fishery within the Anvik River.

The directed commercial fishery for fall chum salmon began in 1961. Fall chum salmon commercial harvests increased beginning in 1979 (Appendix A.6). Observations of low spawning escapements in the mid-1980s resulted in more conservative management and reduced commercial harvests since 1986. The Yukon River Drainage Fall Chum Salmon Management Plan was adopted by the Board of Fisheries in March 1994. The plan identified the need for 400,000 fall chum salmon for escapement and approximately 200,000 fall chum salmon to provide for Alaskan subsistence and Canadian harvests. A total of 600,000 fall chum salmon are needed to allow for normal subsistence activities. Under the plan, commercial fishing in all districts may only be allowed when the projected run size inseason is greater than 650,000 fall chum salmon. Additionally, there has been an effort to rebuild both Canadian and Toklat River fall chum salmon stocks.

Coho salmon returns to the Yukon River are of lesser magnitude than fall chum salmon and are taken incidentally to the fall chum salmon commercial directed fishery. There has been a trend of increasing coho salmon harvests and escapements since 1984 (Appendix A.7 and E.9).

Pink salmon commercial harvests have been very small due to an extremely limited market for Yukon River pink salmon to date.

The majority of commercial fishermen are residents of the Yukon River drainage. The development of the commercial salmon fishery has enabled many area residents to obtain a cash income. The cash income provides a means for many of the area residents to maintain a subsistence life-style. Income earned from commercial fishing is often used to obtain hunting and fishing gear (e.g. nets, boats, and motors) utilized for subsistence activities.

Most fishermen operate outboard powered skiffs of 18 to 24 feet in length. Very few skiffs utilize gillnet rollers or power reels of any type. There has been a large increase in the use of larger outboard motors, VHF radios, and fish finders, which has increased the efficiency of the fleet.

The majority of the salmon harvest is presently processed as a fresh or frozen product in contrast to earlier years when canning and salting were of greater importance (Appendix A.10). Salmon are processed at shore-based or floating operations, or transported by aircraft outside the area for processing. Production of salmon roe (purchased directly from fishermen) is prevalent in the Upper Yukon Area. Fish ticket reports containing a breakdown of salmon roe by species other than chum salmon have only been available since 1990. It is certain that relatively small amounts of chinook and coho salmon roe were reported as summer chum and fall chum salmon roe, respectively prior to 1990. A few salmon are sold to local markets. Small quantities of chinook, fall chum, and coho salmon are smoke-cured and sold as "strips," a local specialty product. In addition, undocumented quantities of chum and coho salmon taken commercially are dried and sold as dog food.

Lower Yukon Area

Since the onset of the commercial salmon fishery in 1918, the majority of the Yukon River harvest has occurred in Districts 1 and 2 where fishing and processing effort is concentrated and flesh quality is optimal. With the advent of the Commercial Fisheries Limited Entry (CFEC) program in 1976, fishing effort in terms of the number of participants stabilized, but efficiency has increased. From 1987 through 1996, an average of 707 CFEC gillnet permits have been issued annually (Appendix A.8.). Lower Yukon Area permits are designated as gillnet and either set or drift gillnets may be operated. Permit holders may transfer between Districts 1, 2, and 3. Set gillnets are commonly used in coastal areas near the river mouth, but drift gillnets are the predominant gear type elsewhere.

Chinook salmon harvest quotas were eliminated for Districts 1 and 2 in 1960. From 1961 through 1980, the fishery was regulated by scheduled weekly fishing periods with the season opened by a published regulatory date. Fishing time during the chinook salmon season was allowed for four days a week during 1961-1967, but was reduced to: 3-1/2 days a week beginning in 1968, 3 days a week in 1974, and 2-1/2 days a week in 1977. From 1982-1986, fishing periods of 24 hours duration generally occurred twice weekly. During 1987, 12-hour periods were introduced. Since 1989, commercial periods have been 6, 9, or 12 hours in duration. Since 1981, a 60,000 to 120,000 chinook salmon guideline harvest range has been in effect for Districts 1 and 2 combined (Table 1). In District 3, a guideline harvest range of 1,800-2,200 chinook salmon was established in 1979.

Sale of other species of salmon captured during the chinook salmon season, excluding the 1920s, has been allowed only since 1967. The incidental catch of summer chum salmon was limited during the chinook salmon season in the late 1960s as fishermen could use only gillnets of eight inch minimum stretched mesh. However, beginning in 1970, each fisherman could substitute up to 50 fathoms of gillnet of any mesh size in Districts 1 and 2. In 1973, all mesh size restrictions were lifted during the chinook salmon season (from June 1 through early July).

A regulation was adopted in 1973 which specified that gillnets of six inch mesh size or less could be fished after a specified date in early July in Districts 1 and 2. Prior to the 1976 fishing season, a regulation was adopted which established a flexible range of dates from June 27 to July 5 in Districts 1 and 2, and July 5-15 in District 3, after which only gillnets of six inch maximum mesh size could be used. Effective for the 1985 fishing season, a regulation was adopted which eliminated specific dates and implemented emergency order authority for establishing restricted mesh size periods (six inch maximum mesh size) in Districts 1, 2, and 3. Additionally, the Board of Fisheries issued a directive to the department to provide for summer chum salmon directed fishing periods prior to the end of the chinook salmon season if the summer chum salmon run was average or better in strength.

Similar to chinook salmon, fishing time during the fall chum salmon season in the Lower Yukon Area has gradually been reduced since the 1960s. From 1983 though 1985, two 12-hour fishing periods per week were allowed in Districts 1 and 2, except that fishing time remained at two days per week for setnet fishermen in the coastal Setnet Only Area of District 1 (Figure 20). More commercial fishing time has been allowed in the coastal Setnet Only Area because of the influence tides have on fishing efficiency.

Since 1983, a season closure of July 15 was established in the Lower Yukon Area to protect the early portion of the fall chum salmon run and to provide more time to evaluate run strength. The guideline harvest range was reduced to 0-110,000 fall chum salmon for Districts 1, 2, and 3 through implementation of the Yukon River Fall Chum Salmon Management Plan in 1986. Since 1986, fishing period duration has typically been 12 hours in the Setnet Only Area and six hours in the remainder of the Lower Yukon Area. The current guideline harvest range of 60,000 to 220,000 fall chum salmon for Districts 1, 2 and 3 combined was established in 1990. No commercial fishing has been allowed in the lower river during the fall season in 1992, 1993, and 1994.

Upper Yukon Area

Prior to 1974, the Yukon River drainage above the confluence of the Koyukuk River was designated as a single district (District 4). By regulation, commercial fishing was allowed 7 days per week until the quotas of 2,000 chinook salmon and 2,000 fall chum and coho salmon combined were taken. These quotas were established for the purpose of allowing a limited commercial utilization to continue, which had occurred for many years. Fish wheels and set gillnets are the legal gear types for commercial salmon fishing in the Upper Yukon Area. Fishermen may not transfer between districts in the Upper Yukon Area.

In recognition of the developing upriver commercial fishery and the desire of fishermen in the upper portion of the drainage to be allowed increased participation, the Alaska Board of Fish and Game adopted several major regulation changes prior to the 1974 fishing season. District 4 was reduced in size and two new Districts, 5 and 6, were defined. Additionally, the weekly commercial salmon fishing period was reduced from 7 to 5 days per week. Regulations also provided for increases in the upriver commercial harvest quotas.

Since 1974, the Alaska Board of Fisheries has enacted a number of major regulation changes in the Upper Yukon Area. Weekly fishing periods were reduced in all districts (except the upper portion of District 5) from 5 to 4 days per week, and split-period (two 48-hour periods) fishing schedules were established in 1980. Chinook salmon, and fall chum and coho salmon combined quotas were replaced by flexible guideline harvest ranges beginning in 1979. The current chinook salmon guideline harvest ranges for Districts 4, 5, and 6 were established in 1981. District 4 boundaries were redefined and new subdistricts created to allow for the possibility of more stock-specific management of fall chum and coho salmon in 1979. New subdistricts within District 5 were created in 1981. The combined fall chum and coho salmon guideline harvest ranges were reduced in 1986. In 1990, combined fall chum and coho salmon guideline harvest ranges were increased. In 1993, coho salmon were

excluded from these harvest ranges. Since 1990, the duration of fishing periods has typically decreased with fishing time being based on inseason run assessment.

In the spring of 1988, the Alaska Board of Fisheries met in special session to take testimony on current and proposed salmon management practices on the Tanana River. This special session was a result of large scale illegal salmon and salmon roe sales documented in 1987 in portions of Districts 5 and 6. The board adopted regulations for District 6 which included: 1) reducing allowable commercial and subsistence fishing time from two 48-hour periods to two 42-hour periods per week, 2) specifying that there would be no more than one 42-hour commercial fishing period per week during the fall season, and 3) requiring subsistence fishing permits for the entire Tanana River drainage and established inseason reporting requirements for a portion of Subdistrict 6-B and all of Subdistrict 6-C.

The board further instructed the staff to manage District 6 on the basis of existing guideline harvest ranges, indicating that these guidelines are to be exceeded only if it can be determined that doing so would not jeopardize meeting subsistence and escapement requirements. Based on concerns for fall chum salmon spawning escapements in the Toklat River, the board in February 1990 reduced the Subdistricts 6-A and 5-A commercial fishing schedule to no more than one 24-hour period per week during the fall fishing season.

In most of the Upper Yukon Area, summer chum salmon flesh is difficult to market because of the high cost of transportation and generally advanced state of sexual maturity. However, the summer chum salmon roe quality is judged by the industry to be excellent. This has resulted in increased sales of summer chum salmon roe since 1980. Because of the large Subdistrict 4-A summer chum salmon roe fishery and difficulty in estimating the associated harvest, the guideline harvest range for that subdistrict was established in February 1990 as 113,000 to 338,000 summer chum, or the equivalent of 61,000 to 183,000 pounds of roe or some combination of fish and pounds of roe. In addition, regulations were adopted which stipulated that no more than 183,000 pounds of summer chum salmon roe from Subdistrict 4-A harvests may be sold annually. If the roe cap is reached, fishing effort may continue, but only the sale of chum salmon in the round will be allowed. The board also required that all salmon caught by CFEC permit holders during commercial fishing periods in Subdistrict 4-A be reported in numbers on fish tickets.

In March 1994, the Alaska Board of Fisheries adopted the Anvik River Chum Salmon Fishery Management Plan. Under this plan the Anvik River may be opened to summer chum salmon commercial fishing if a surplus greater than the escapement goal of 500,000 fish is available. The intent is to allow a harvest of Anvik River summer chum salmon which are in excess of the spawning escapement goal and to decrease the harvest pressure on non-Anvik River summer chum salmon stocks in the mainstem Yukon River near the Anvik River. All chinook salmon taken in the Anvik River during commercial fishing periods must be returned to the water alive.

During the November 1994 Board of Fisheries meeting, the Anvik River Chum Salmon Fishery Management Plan was amended to allow the following gear types: hand beach and purse seines, fish wheels with live boxes, and a single set gillnet not to exceed 25 fathoms in length and not larger than 5 1/4 inch mesh. However, the gillnet must be continuously attended to release chinook salmon. Beginning in 1994, the lower 12 miles of the Anvik River have been opened to commercial fishing (Figure 19). Hand beach seines have been the dominant gear type utilized in the fishery. Only summer chum salmon roe has been sold from the Anvik River (Appendix A.16). A roe cap of 100,000 pounds of summer chum salmon roe was established by the board in March 1996.

Carcasses resulting from roe extraction for commercial sales appear to be fully utilized for subsistence purposes except for District 4 summer chum harvests since 1980. A portion of the carcasses resulting from this harvest is utilized for subsistence purposes (primarily for dog food), however, some wastage is suggested by the large difference between the estimated commercial harvest and the reported subsistence use in some years. District 4

commercial related summer chum salmon harvests were estimated from 1980-1988 based on fish ticket sales, estimated sex ratio as documented by the department operated test fish wheel located near Kaltag from 1981 to 1985, and an estimated average roe weight of one pound per female chum salmon. The one pound per female average roe weight was estimated based on the subjective judgment of processors and fishermen.

In 1989, a comprehensive study was conducted in District 4 to collect more accurate average roe weight per female and sex ratio data to estimate the total commercial related summer chum harvest (Sandone 1991). The average roe weight per female for the 1989 season was calculated to be 0.9 pounds. A similar average roe weight per female was estimated in samples collected in 1988. Since 1989, the department has sampled commercial catches from fish wheels and gillnets in upper river districts to estimate the mean proportion of females and to estimate average roe weights per female.

Fish wheels are the primary type of gear for harvesting summer chum salmon because of local fishing conditions and the efficiency of the gear. Fish wheels account for roughly 95% of the commercial harvest of this species in the Upper Yukon Area.

Subsistence Fishery

Subsistence fishing occurs throughout most of the Yukon Area. Historically, subsistence salmon harvests were very large. Subsistence salmon harvests declined through the 1970s (ADF&G 1985). Beginning in the early 1980s, due, in part, to a renewed interest in sled dogs, the number of dogs within the Yukon Area has increased. Coincidentally, there has been an increase in the subsistence salmon harvest. In addition, the human population along the river is increasing, which may also contribute to increased subsistence harvests.

Subsistence fishermen operate gillnets in the main rivers and coastal marine waters. Fish wheels are also utilized by subsistence fishermen in the upper Yukon and Tanana Rivers. Beach seines are occasionally used in tributaries near spawning grounds to catch schooling or spawning salmon. Many people who fish for commercial purposes also operate as subsistence fishermen. In order to enforce commercial salmon fishing regulations, it is necessary to place some restrictions on the subsistence fishery. However, throughout the fishing season, substantially more fishing time is allowed for subsistence than for commercial purposes.

In general, prior to 1993, subsistence fishing has been managed and regulated to coincide with commercial fishing periods when the commercial fishing season is open. However, regulations adopted in 1993 and 1994 separated the subsistence and commercial fishing times in Districts 1, 2, 3, and Subdistrict 4-A. Subsistence fishing is closed 18 hours before, during, and 12 hours following a commercial period in these areas. In all districts, additional subsistence only fishing time may be allowed during the commercial fishing season. Typically, subsistence fishing is allowed seven days per week in Districts 1 through 5, and for two 42-hour periods per week in District 6, prior to and following the commercial fishing season.

In February 1990, the Alaska Board of Fisheries closed the lower Kantishna River and the Toklat River drainage to subsistence fishing for fall chum salmon as part of an effort to rebuild the Toklat River spawning stock. However, as a result of a request from Kantishna River subsistence fishermen for injunctive relief, the Alaska Superior Court provided for subsistence fishing to resume in the Kantishna River in 1991. In February 1992, the board adopted the Toklat River Fall Chum Salmon Rebuilding Management Plan, which allowed subsistence salmon fishing, but only with fish wheels equipped with liveboxes, and with the stipulation that all chum salmon must be returned alive to the water. In March 1993, the board provided a fishery harvest limit of 2,000 fall chum salmon and individual permit limits of 450 fall chum salmon. Additionally, fishermen were allowed to continue fishing after the fishery harvest limit was reached using a fish wheel with a livebox and releasing all fall chum

salmon alive. In November 1994, the board amended the Toklat River Fall Chum Salmon Rebuilding Plan by allowing the department the ability to exceed the Kantishna River fall chum salmon subsistence fishery harvest limit in years that indicators suggest that the Toklat River fall chum salmon minimum escapement objective would be achieved.

There is usually little intentional wastage of the fish taken for subsistence purposes. A major portion of human food fish are frozen, dried or smoked for later consumption. Wet weather may cause drying fish to spoil. Chinook salmon are used mainly for human consumption. However, while chum and coho salmon are also used for human consumption, large numbers are also taken to feed sled dogs.

Comprehensive annual surveys of the subsistence salmon fishery were initiated by the department in 1961. Survey methodology and technique have varied from year to year, however, it is felt that the estimates reflect harvest trends. Normally, subsistence harvest data collected through the use of postseason household interviews, catch calendars, mail out questionnaires, and telephone interviews have been expanded for unknown fishing families or households on a community basis and expanded community harvests summed for district and total drainage estimates on an annual basis (Walker et al. 1989). Current methodology for estimating subsistence salmon harvests can be found in other reports (Bromaghin and Hamner 1993 and Borba and Hamner 1996).

Beginning in the early 1970s, subsistence salmon fishing permits have been required in three sections of the Upper Yukon Area as follows: 1) the Yukon River near the Yukon River bridge between Hess Creek and Dall River, 2) the upper portion of District 5 between the upstream mouth of Twenty-Two Mile Slough and the U.S./Canada border, and 3) the Tanana River near Fairbanks. Beginning in 1988, subsistence salmon fishing permits have been required for the entire Tanana River drainage. Households which fish in areas requiring a permit are required to obtain a permit, document their catch, and return the permit upon expiration.

The majority of the subsistence salmon harvest is taken in the Upper Yukon (Appendix D.1-D.4). The practice of keeping sled dogs is much more common in the Upper Yukon Area and is considered a major factor affecting the level of subsistence salmon use. It is also likely that the sale of subsistence-caught salmon roe (legal from 1974 through 1977) increased subsistence chum salmon harvests in the Upper Yukon Area above normal use levels during that period. Estimates of illegal sales of fall chum and coho salmon, and salmon roe in Districts 5 and 6 in 1987 were included with subsistence harvests, because there was no fall commercial fishing season allowed that year.

Since the development of the salmon roe fishery, distinguishing between subsistence and commercial harvests has been made more difficult. The reason for this is that fish harvested to produce commercial roe sales are also utilized for subsistence purposes. It is probable that the unmarketable carcasses made available by the commercial roe fishery have simply replaced a large portion of the subsistence harvest. In 1990, the harvests that produce commercial salmon roe sales were separated from subsistence harvests in total utilization tables because of the difficulty in assigning a single use to the harvest. The commercial harvest is reported as fish sold in the round only. Estimated harvests of female salmon to produce roe sales, and the incidental harvest of male summer chum salmon in District 4 are reported as commercial-related harvest. The harvest of males in salmon roe fisheries other than the summer chum salmon fishery in District 4 are believed to be either sold or retained for subsistence use. Since 1986, subsistence surveys have been conducted so as to estimate the number of summer chum salmon taken by subsistence fishing means not related to commercial fishing. The proportion of the summer chum salmon subsistence harvest taken unrelated to commercial fishing in 1986 was used to estimate District 4 subsistence harvests from 1980 through 1985. The reported subsistence harvest was reduced in some districts and years (Appendix A.19-A.22) based upon assumptions of when and where fish harvested to produce commercial roe sales were included in reported subsistence harvests.

The commercial-related salmon harvest can be viewed as utilization for both commercial and subsistence purposes. To avoid double counting, a separate commercial related harvest estimate can be summed with the subsistence harvest estimate to provide the total potential subsistence use, or it can be summed with the commercial harvest for total commercial utilization.

Personal Use Fishery

Personal use fishing is similar to subsistence fishing, but does not have subsistence fishing's statutory priority over other uses. Under the statutes and regulations that were in effect from 1988 until July 1, 1990, Alaska residents who lived in non-rural areas were prohibited from participating in subsistence fishing and subsistence fisheries were limited to rural areas. In those years, non-rural residents harvested salmon under personal use fishing regulations, which could apply to both rural and non-rural areas.

In the McDowell case, which took effect July 1, 1990, the Alaska Supreme Court struck down the rural residency requirement for subsistence participation, ruling that the Alaska Constitution prevented allocation of fish and game to people based on the location of their residence. The result was that every resident of the State of Alaska became eligible for subsistence fishing and, according to a lower court ruling, subsistence fisheries were not limited to rural areas.

During a special session in 1992, the legislature revised the subsistence law to once again allow the Board of Fisheries and Game to divide the state into subsistence or nonsubsistence zones. Inside the nonsubsistence areas, personal use fishing was authorized, but subsistence fisheries were not. The 1992 law mandated customary and traditional subsistence fisheries in the rest of the state. All state residents were eligible to participate in all subsistence or personal use fisheries. The Fairbanks Nonsubsistence Area (Appendix D.11), which is centered around the Fairbanks North Star Borough, was the only nonsubsistence area created by the Joint Boards of Fisheries and Game in the Yukon Area.

In October 1993, a state superior court ruled in the Kenaitze case that the nonsubsistence area provision of the 1992 subsistence law was unconstitutional because it discriminated between different areas of the state. Although the state was initially granted a stay of the effect of that decision pending appeal to the supreme court, the stay was vacated on April 11, 1994. With the stay lifted, the state was required to provide for subsistence fishing in nonsubsistence areas during the 1994 season. On May 9, 1995, the Alaska Supreme Court reversed the superior court, upholding the constitutionality of the nonsubsistence areas. Since the summer of 1995, only personal use fishing regulations are applicable in nonsubsistence areas.

In 1995, the Joint Board of Fish and Game adopted regulations that affected the Fairbanks Nonsubsistence Area. Within nonsubsistence areas, no subsistence fishing was allowed. This new regulation primarily affected salmon fishermen in Subdistrict 6-C, which falls entirely within the Fairbanks Nonsubsistence Area. In 1995 and 1996, the Subdistrict 6-C salmon fishery was managed under personal use regulations, which included a fishery harvest limit of 750 chinook salmon, 5,000 summer chum salmon, and 5,200 fall chum and coho salmon combined. If this harvest limit is reached, the personal use fishery in Subdistrict 6-C will be closed. A personal use salmon fishing permit is required in Subdistrict 6-C.

Sport Fishery

In general, sport fish salmon harvests in the Yukon Area are relatively minor compared to commercial and subsistence harvests. The Tanana River drainage is the exception, as it supports a popular sport fishery. In 1988, the Board of Fisheries established a guideline harvest range of 300 to 700 chinook salmon for the Salcha

River recreational fishery. In 1990, the Board established a guideline harvest range of 300 to 600 chinook salmon for the Chena River recreational fishery.

Canadian Harvests of Yukon River Salmon

Annual harvest data from the Canadian portion of the Yukon River drainage has been provided by DFO since 1962. The first recorded commercial salmon harvest in the Yukon River drainage occurred in 1903 when 70,000 pounds of chinook and fall chum salmon were taken in Yukon Territory, Canada (ADF&G 1985). Records indicate a Canadian commercial fishery occurred sporadically from 1903 to 1917 and continuously from 1918 to 1947 (Appendix A.3). No harvest records are available from 1948 to 1957. Since 1958, harvest records document the annual salmon harvest by species, and since 1961, by user group.

In the Canadian portion of the Yukon River drainage there are commercial, Aboriginal, domestic, and sport fisheries for salmon. The Aboriginal and domestic fisheries are in some ways comparable to subsistence and personal use fisheries in Alaska, although the Aboriginal fishery is only open to native people. All of the commercial salmon harvest in Canada occurs on the mainstem Yukon River. Canadian salmon harvests in the Porcupine River drainage currently consist only of an Aboriginal fishery.

U.S./Canada Yukon River Salmon Panel and Treaty Negotiations

Negotiations were initiated in 1985 between the U.S. and Canada regarding a Yukon River salmon treaty. The purpose of these negotiations is to develop coordinated conservation and management between the U.S. and Canada for the chinook and fall chum salmon stocks which spawn in the Yukon River drainage in Canada. Salmon stocks that spawn in Alaska, and Alaska's management of those stocks, is not directly a part of these international negotiations.

In the course of these negotiations, both sides have agreed that spawning escapements of chinook and fall chum salmon in the Yukon River drainage in Canada had declined, were substantially below levels necessary to achieve optimum sustained yield, and needed to be rebuilt. It will require both sides working together for rebuilding to be successful.

For Canadian Yukon River mainstem chinook salmon, a six-year stabilization plan was completed in 1995. In Canada, the mainstem Yukon River means the Yukon River drainage in Canada excluding the Porcupine River drainage. The objective of the six-year stabilization plan was to prevent further declines in spawning escapement through achieving an escapement of at least 18,000 chinook for each year through 1995. The six-year stabilization plan resulted in chinook salmon spawning escapements averaging 28,000 fish.

For Canadian Yukon River mainstem fall chum salmon, a 12-year rebuilding plan was agreed upon beginning with the 1990 season. The term "rebuilding" means building spawning escapements back up to prior levels in planned steps over a number of years. The objective of this plan is to rebuild the stock by achieving a spawning escapement of 80,000 or more fall chum salmon for all brood years in the cycle by the year 2001. The U.S. contribution to this effort is to endeavor to deliver to the Canadian border on the mainstem Yukon River an agreed to number of fall chum salmon. The Canadian contribution to this effort is to endeavor to manage the harvest of fall chum salmon in the mainstem Yukon River drainage in Canada by all user groups combined within a guideline harvest range of 23,600 to 32,600 fall chum salmon.

For the Porcupine River stocks, the two sides have only basically agreed that more information is needed and that new fisheries in the Porcupine River drainage will not be initiated for a number of years.

In recent years, there was realization that, while reaching a comprehensive long term agreement remained a formidable challenge given some of the key unresolved issues, there would be benefits that could be realized by more formally implementing the areas of agreement to date. In February 1995, an interim Yukon River Salmon Agreement went into effect. A Yukon River Panel (Panel) was formed to implement the interim Yukon River Salmon Agreement. The Panel also administers a Yukon River Salmon Restoration and Enhancement Fund (Fund). The Panel consists of commercial, Aboriginal, subsistence and recreational fishermen, and federal, state, and territorial representatives. Both sides have to agree on an item prior for the action to occur. The U.S. side of this Panel consists of four Alaskan Yukon River drainage fishermen, one Alaska state government official, and one U.S. federal government official, as well as alternates for each of these seats. There is an advisory group of Alaska Yukon River drainage fishermen providing input to the U.S. side. A Joint Technical Committee (JTC) provides technical support to the Panel. The focus of the Panel is on the salmon stocks that spawn in the Canadian portion of the Yukon River drainage. The Panel makes recommendations to the management agencies in Alaska and Canada.

The interim agreement is to be in place through 1997, with an option to extend if both sides so desire. This allows for a try-out period to get underway with the Panel so that all parties can assess whether this process works effectively without making a longer term and more formal treaty commitment. There are a number of issues that remain to be resolved, and negotiations will continue. The goal of the negotiations will be to reach a long-term agreement on the remaining issues and to incorporate the relevant elements of the interim agreement.

The Yukon River Panel held its inaugural meeting in Whitehorse, Yukon Territory, in April, 1996. After outlining institutional arrangements, the Panel proceeded to address the work of jointly improving salmon stocks of common concern on the Yukon River. The Panel agreed to the first six years of a rebuilding plan for Canadian mainstem chinook salmon stocks. Recognizing the desirability of rebuilding stocks, the parties agreed to an interim minimum spawning escapement objective for Canadian mainstem Yukon River chinook salmon of 28,000 fish for six years beginning in 1996. The U.S. contribution to this effort is to endeavor to deliver between 44,800 to 47,800 chinook salmon to the Canadian mainstem Yukon River. The Canadian contribution to this effort is to endeavor to manage the harvest of chinook salmon in the mainstem Yukon River drainage in Canada by all user groups combined within a guideline harvest range of 16,800 to 19,800 chinook salmon.

Given the prospect of a poor 1997 fall chum salmon return for the Canadian Yukon mainstem, the Panel began discussions on how to deal with this challenge. The Joint Technical Committee provided several options for consideration at the November 1996 meeting of the Panel in Alaska. At that meeting, the Panel agreed to a rebuilding step escapement goal of 49,000 fall chum salmon for the Canadian mainstem Yukon River for 1997.

A key component of the interim Yukon agreement is the Yukon River Salmon Restoration and Enhancement Fund administered by the Panel to address restoration and enhancement of Canadian salmon stocks. In 1996, the Panel agreed to approve several initial projects funded from $140,000 in start-up funds contributed by the United States. The U.S. contributes $400,000 annually to this fund under the interim agreement. A call for proposals was sent out during 1996 for projects proposed for the 1997 season. The Panel will meet in March 1997 to determine which projects will be funded.

High Seas Salmon Gillnet Fisheries

Chinook salmon of western Alaska origin were intercepted yearly by the Japanese mothership and landbased gillnet fisheries through 1991 (Appendix A.26). Current estimates indicate an average of 141,000 chinook salmon were taken during 1975-1983. Yukon River chinook salmon comprised the majority of western Alaska stocks taken in the Bering Sea mothership harvests. In 1980, a total of 438,000 western Alaska chinook salmon was estimated to have been taken in these fisheries which exceeded the domestic commercial catch in western Alaska for that year.

Until 1988, the Japanese mothership salmon fishery operated in parts of the U.S. Exclusive Economic Zone (EEZ, waters from 3 to 200 miles of the U.S. coast). Beginning in 1988, the mothership fishery occurred outside of the EEZ. In 1990, the Japanese mothership fishery was converted to a "nontraditional land based salmon fishery". The nontraditional land based salmon fishery ended in 1991. Estimates of the numbers of western Alaska chinook salmon in this harvest are not available.

Foreign, Joint-Venture, and U.S. Domestic Groundfish Fisheries

Information on incidental chinook salmon catches in offshore fisheries is presented in Appendix A.26. Foreign groundfish fisheries in the EEZ ended in the Gulf of Alaska in 1985 and in the Bering Sea in 1987. The joint-venture groundfish fishery ended in the Gulf of Alaska in 1988 and ended in the Bering Sea in 1990. These fisheries were replaced by U.S. domestic groundfish fisheries.

Due to the lack of an observer program, the numbers of salmon taken by the U.S./domestic groundfish fleet were estimated through 1989. NMFS initiated an observer program beginning in 1990. In 1996, U.S. groundfish fisheries captured 64,700 chinook salmon in the Bering Sea and Aleutian Islands area and 16,000 chinook salmon in the Gulf of Alaska. Additionally, 83,000 other salmon species were taken, of which a majority were chum salmon.

Alaska Peninsula

The majority of chum salmon captured during June in the Unimak and Shumagin Islands area, located on the south side of the Alaska Peninsula, are bound for Bristol Bay, Asia, and the AYK Region, which includes the Yukon Area. The stocks contributing to the harvest in this fishery have been described by several studies, including a tagging study in 1987 and a 1983 scale pattern analysis study. In 1993 and 1994, a genetic stock identification study was conducted using fishery samples from the South Unimak area. Results of this study indicated stock contribution was similar to the 1987 tagging study. Sockeye salmon is the target species in the June fishery, but relatively large incidental catches of chum salmon are made. The sockeye salmon harvest is regulated by a quota that is annually adjusted according to the Bristol Bay sockeye salmon forecast.

For the 1996 season, the Board of Fisheries retained a harvest cap of 700,000 chum salmon during the June fishery. In addition, the board continued to allow the department to open the fishing season and establish fishing periods based on sockeye to chum ratios in an effort to reduce incidental chum harvests. A total of 1,029,000 sockeye and 360,000 chum salmon was taken in the June fishery in 1996. The chum salmon harvest was 49% lower than the harvest cap.

Norton Sound

A commercial harvest of 4,984 chinook salmon was taken in coastal Norton Sound waters in 1996. The previous 5-year average harvest was 6,745 fish. Some Yukon River bound chinook salmon are known to be intercepted by this fishery.

Salmon Spawning Escapement

An essential requirement for management of the Yukon River salmon fisheries is documentation of annual salmon spawning escapements. Such documentation provides for:

1. Determination of appropriate escapement levels or goals for selected spawning areas or management units;

2. Evaluation of escapement trends;

3. Evaluation of the effectiveness of the management program, which in turn forms the basis for proposing regulatory changes and management strategies; and

4. Evaluation of stock status for use in projecting subsequent returns.

Escapement Assessment Methods

The Yukon River drainage is too extensive for complete comprehensive escapement coverage of all salmon spawning streams. Consequently, low-level aerial surveys from single-engine, fixed-wing aircraft form an integral component of the escapement assessment program. Nevertheless, comprehensive assessment studies employing such techniques as intensified ground surveys, mark-and-recovery programs, counting towers, weirs, and hydroacoustics are also conducted. Regardless of the method utilized, the overall objective of escapement assessment in the Yukon Area is to estimate abundance (or often indices of relative abundance), timing, and distribution of spawning salmon populations throughout the drainage. Specific objectives may vary by individual project, while individual project objectives may vary by year depending upon fiscal and personnel constraints.

There are both advantages and disadvantages related to each type of assessment method. The more comprehensive studies tend to provide estimates of total salmon abundance and are often less dependent upon weather and water conditions. However, due to costs associated with staffing and operating the more sophisticated assessment projects, only a few have been initiated over the years primarily on major spawning streams.

In addition, a department mainstem sonar project has been operational since 1986 to estimate total salmon passage by species through the lower Yukon River at river mile 123 near Pilot Station. Hydroacoustic techniques are used to estimate passage of fish and a comprehensive drift gillnet sampling program is conducted to apportion sonar counts to species. Another study designed to estimate salmon abundance by species in the Yukon River has been operated annually by DFO since 1982 (excluding 1984) near Dawson in Canada. That project involves a comprehensive mark-and-recovery study designed to estimate the abundance of chinook and chum salmon entering the Canadian portion of the mainstem Yukon River.

In contrast to the more comprehensive assessment projects, perhaps the greatest advantage of aerial surveys is the cost-effectiveness of obtaining escapement information throughout an extremely vast and remote area. Another

advantage to aerial surveillance is that current or potential habitat-related problems arising from natural or man-induced causes can be identified. Among the disadvantages are that results may be highly variable if non-standardized procedures are used.

Variability in aerial survey accuracy is dependent upon a number of factors such as weather and water turbidity, timing of surveys with respect to peak spawning, aircraft type, survey altitude, experience of both pilot and observer, and species of salmon being assessed. It is recognized that aerial estimates are lower than actual stream abundance due to these factors. Further, peak abundance measured by aerial survey methods is significantly lower than total spawning abundance due to the die-off of early spawners, and arrival of fish after the survey. Aerial estimates in a given stream may demonstrate a wide range in the proportion of fish being estimated from year to year. Peak aerial counts, however, can serve either as indices of relative abundance for examination of annual trends in escapement or as a basis from which to estimate total escapement using base year data and established expansion factors. Aerial survey results may also be useful in apportioning tributary spawning distribution to a mainstem total escapement estimate obtained from sonar, weir or tower counts.

Aerial escapement estimates are obtained from as many spawning streams as possible within the confines of fiscal, personnel, and weather constraints. However, selected spawning streams or "index areas" which represent a larger geographic area have been identified and receive highest priority. Index areas have been designated due to their importance as spawning areas and/or by their geographic location with respect to other unsurveyable salmon spawning streams in the general area.

Escapement Goals

Biological escapement goals (BEG's) have been established for several Yukon River drainage salmon spawning streams or areas (Appendix E.1). The underlying principle in setting the current BEGs was that maintenance of average or better spawning escapements should provide for sustained yield consistent with historic levels. Most of these goals represent the minimum number of desired spawners considered necessary to maintain the historical yield from the stocks and are based upon historical performance, i.e., they are predicated upon some measure of historic averages. Establishment of escapement goals based upon a rigorous analysis of maximum sustained yield is not possible at this time due to the nature of the Yukon River mixed stock fisheries, lack of stock identification data, and consequential inability to reconstruct total inriver stock-specific returns. Consequently, most escapement goals are based upon aerial survey index estimates which do not represent total escapement but are assumed to reflect relative spawner abundance when using standard survey methods under acceptable survey conditions. However, the goals established for Anvik River summer chum salmon and selected fall chum salmon spawning stocks represent the desired minimum target for total spawning abundance; being based upon a somewhat more comprehensive escapement data base.

In order to gain greater understanding of escapement requirements and fluctuations in run size by spawning stocks, several specific projects are underway. Stock composition modeling is being utilized for chinook salmon based on scale pattern analysis. In addition, genetic stock identification using electrophoretic techniques is being examined as a tool for identifying discrete stocks of chinook and chum salmon in the mixed stock Yukon River fisheries.

AREA SALMON REPORT 1996

Following several years of decline beginning in 1990, chum salmon returns were critically weak in 1993. However, the summer and fall chum salmon runs in 1994, 1995, and 1996 were larger than projected preseason.

Productivity and survival from the primary brood years appeared to be much higher than that observed from 1990 through 1993. During the fishing season, teleconferences with the Yukon River Drainage Fisheries Association (YRDFA) were conducted to obtain input from user groups and to exchange salmon run status information.

Alaskan Commercial Fishery 1996

Commercial sales totaled 376,249 salmon and 335,729 pounds of unprocessed salmon roe for the Alaskan portion of the Yukon River drainage in 1996 (Table 4). The catch was composed of 89,671 chinook, 145,593 summer chum, 88,342 fall chum, and 52,643 coho salmon in the round. In addition, 1,470 pounds of chinook roe, 314,759 pounds of summer chum roe, 14,671 pounds of fall chum roe, and 4,829 pounds of coho roe were sold by commercial fishermen. Declining salmon markets, particularly for chum salmon flesh, and early run timing had a major impact on the commercial fishery in Alaska, resulting in limited harvests in some districts and lower exvessel value. Higher chum salmon roe sales reflected the average to above average summer chum and fall chum salmon runs during the 1996 season in the Yukon River and market factors. The chinook salmon commercial harvest was the lowest since 1976 because of the early run timing and no better than average overall run size.

The total estimated commercial harvest including the estimated harvest to produce roe sold was 90,192 chinook, 682,233 summer chum, 105,630 fall chum, and 55,982 coho salmon (Table 4). The 1996 estimated salmon harvests compared to the recent 5-year averages (1991-1995) were as follows: chinook, 19% below (Appendix A.4), summer chum, 41% above (Appendix A.5), fall chum, 6% below (Appendix A.6), and coho, 68% above average (Appendix A.7).

The department sold a total of 1,698 chinook, 7,309 summer chum, 1,717 fall chum and 1,728 coho salmon in District 1 test fisheries in 1996 (Table 12). These fish are not included in commercial sales.

Yukon Area fishermen received an estimated $4.8 million for their 1996 salmon catch, approximately 37% below the recent 5-year average value of $7.6 million (Appendix B.12 and C.22). Salmon buyers and processors operating in the Yukon Area during 1996 are listed in Table 2. The majority of the salmon harvest was processed as a fresh or frozen product. Commercial salmon harvest and salmon roe production is presented in Appendix A.10. Average prices paid to fishermen and average salmon weight are presented in Appendices A.11 and A.12, respectively.

In 1996, a total of 779 CFEC gillnet permits and 165 fish wheel permits (not including transfers) were issued (Table 3). Fishing effort was lower than normal because of declining salmon markets and corresponding lower prices. A total of 763 permit holders participated in the fishery during 1996 (Table 11), which was 5% below the recent five-year-average of 804 permit holders (Appendix A.8). A total of 628 permit holders fished in the Lower Yukon in 1996; the lowest effort since 1977. A total of 135 permit holders fished in the Upper Yukon Area, which was near the recent average of 131 permits. A total of 656 gillnet and 107 fish wheel permits were fished in 1996. The number of commercial fishing permits (fishermen) that made at least one salmon delivery by district during the season are shown in Appendix A.9.

Preliminary age composition data from the Lower Yukon Area indicated 6-year-old chinook accounted for approximately 38% of the pooled chinook salmon samples from commercial harvest. This lower than normal percentage (Appendix A.23), and corresponding number, of age-6 chinook salmon in 1996 was consistent with the below average return of age-5 fish in 1995, but inconsistent with the above average escapements documented in the 1990 parent year. Correspondingly, the percentage of 5 and 7-year old

chinook salmon in the commercial harvest was higher than average. Approximately 54% of the commercial harvest in District 1 and 2 was females. Only one fin-clipped chinook salmon which originated from the Whitehorse hatchery was recovered during commercial catch sampling activities and none were recovered from the lower river test fishery.

The estimated percentage of Canadian-spawned chinook salmon harvested in 1996 from all fisheries throughout the Yukon River drainage combined (Alaska and Canada) is 62% (Appendix A.24). The estimates presented in Appendix A.24 are based on analyses of chinook salmon scale patterns, age composition ratios, and geographic distribution of harvests and escapements (Schneiderhan 1997 *in press*).

Preliminary age composition information indicated age-5 summer chum salmon comprised approximately 59% of the pooled samples taken from the lower river commercial harvest. Age-6 summer chum salmon accounted for an unusually large proportion of the harvest during early June ranging from 7% to 12% of the samples from June 9 through June 14. Age-4 fall chum salmon dominated District 1 commercial harvest samples, comprising approximately 61% of the pooled samples. Age-4 coho salmon dominated District 1 commercial harvest samples, comprising approximately 89% of the pooled samples. Historical age composition information is shown in Appendix A.23.

Lower Yukon Area Harvest

The 1996 Lower Yukon Area commercial salmon harvest totaled 86,851 chinook, 123,233 summer chum, 63,280 fall chum, and 48,679 coho salmon and 935 pounds of summer chum salmon roe (Tables 4 and 11). The total estimated summer chum salmon harvest was 124,767 fish. The total estimated harvest includes the reported number of female and male summer chum salmon harvested to produce roe sold in District 3 (1,534 fish). The chinook salmon harvest was 17% below the recent five-year average (1991-1995), the summer chum harvest was 39% below the recent five-year average, the fall chum harvest was 7% below the recent five-year average, and the coho harvest was 59% above the recent five-year average.

In 1996, a total of 707 CFEC gillnet permits were issued for the Lower Yukon Area (Table 3), of which, 628 permit holders fished at least once during 1996. Lower Yukon fishermen were paid an average (per pound) of $1.95 for chinook, $0.09 for summer chum, $2.96 for summer chum roe, $0.10 for fall chum, and $0.26 for coho salmon. The average price paid for chinook in District 2 was 59% of the average price paid in District 1. In recent years the District 2 average price has ranged from 83% to 109% of the price in District 1. The average price paid for summer chum and fall chum salmon was the lowest since 1970. The estimated exvessel value of the Lower Yukon Area harvest was $3.7 million which was 46% below the 1991-1995 average value (Appendix B.12). The average earnings per fisherman in the Lower Yukon Area was approximately $5,933.

Seven buyer-processors and one catcher seller operated in the Lower Yukon Area in 1996. All of the commercial salmon harvest was shipped to fresh or fresh/frozen markets. Canning of salmon in the Lower Yukon Area has not occurred since 1984.

Upper Yukon Area Harvest

Upper Yukon Area commercial salmon sales in the round totaled 2,820 chinook, 22,360 summer chum, 25,062 fall chum, and 3,964 coho salmon in 1996 (Tables 4 and 11). In addition, roe sales by species totaled 1,470 pounds for chinook, 313,824 pounds for summer chum, 14,671 pounds for fall chum, and 4,829 pounds for coho

salmon. Summer chum salmon roe sales were 136% above the 1991-1995 average. Historical commercial harvest by statistical area is presented in Appendices C.4 -C.21.

Total estimated commercial related salmon harvests by district during 1996 are presented in Table 4. These catch figures reflect the estimated number of female salmon harvested to produce roe sold in Districts 4-6. In District 4, the estimated incidental catch of male summer chum salmon to produce roe sold is also included. Appendices C.1 to C.3 present commercial salmon sales and estimated harvest by gear type (set gillnet and fish wheel).

Nine buyer-processors and eleven catcher-sellers operated in the Upper Yukon Area during 1996. Upper Yukon commercial fishers received an estimated average price per pound of $0.95 for chinook salmon, $2.57 for chinook salmon roe, $0.07 for summer chum salmon, $3.05 for summer chum salmon roe, $0.13 for fall chum salmon, $1.71 for fall chum salmon roe, $0.09 for coho salmon, and $2.16 for coho salmon roe (Appendix A.11). Generally, the average price per pound for salmon roe decreased through the season. The estimated exvessel value of the 1996 harvest was $1,072,017 (Appendix C.22). A total of 135 fishermen participated in the commercial fishery. The average earnings per fisherman was approximately $7,941.

Chinook and Summer Chum Salmon Season

The 1996 preseason outlook was for an average chinook salmon run based on parent year escapements and the below average return of 5-year-old fish in 1995. The summer chum salmon outlook was for an average size run based on parent year escapements. The commercial harvest in the Alaskan portion of the drainage was anticipated to be between 88,000 and 108,000 chinook and 400,000 to 800,000 summer chum salmon.

The Lower Yukon Area was generally free of ice by May 19 (Appendix A.25). The first chinook salmon catches were reported on May 24 near Sheldon Point by a subsistence fisherman. The department's test fishing projects recorded the first chinook and summer chum salmon catches on May 28 (Appendix B.13). In contrast to most years, chinook and summer chum salmon entered the river through all three major mouths from the very beginning of the migration. Normally, chinook and summer chum salmon enter the river primarily through the south and middle mouths.

The lower river test fishery indicated the chinook salmon run had the earliest migratory timing on record. Only the 1981 and 1983 runs approximated this early run timing. Approximately 50% of the chinook salmon run had entered the lower river by 10 June, which was ten days earlier than average. The cumulative catch per unit effort (CPUE) of 30.7 for chinook salmon from Big Eddy and Middle Mouth 8.5 inch mesh size set gillnet sites indicated above average abundance in 1996 (Appendix B.13 and B.14). However, this indication of a strong run was viewed cautiously, as water levels were well below normal, which may have resulted in increased efficiency of the test fishery. Postseason analysis indicated that the chinook salmon run was no better than average based on comparative commercial harvest and escapement data. Chinook salmon test fishing catches in 5.5 inch mesh size set gillnets were below average.

Summer chum salmon migratory timing was also early. Only the 1983 summer chum run exhibited similar early timing according to the lower river test fishery. Approximately 50% of the summer chum salmon run had entered the lower river by June 12 according to test fishing CPUE data (Appendix B.13), which was eleven days earlier than average. A record test net cumulative CPUE of 162.9 for summer chum salmon indicated the 1996 run was above average in abundance and similar to the very large runs in 1981 and 1995 (Appendix B.15). Again, this indication of a strong run was viewed cautiously, as water levels were well below normal, which may have resulted in increased efficiency of the test fishery. Preliminary postseason analysis of comparative commercial harvest and escapement data indicated the summer chum

salmon run was average to above average in magnitude. It appeared that summer chum salmon spawning stocks from the Koyukuk River drainage and upstream, including the Tanana River drainage were very strong, whereas the return of spawning stocks downstream of the Koyukuk River drainage were generally lower than that observed in 1994 and 1995.

Districts 1 and 2

The Yukon Area Management Plan requires approximately 7-10 days of chinook salmon passage through the lower river, as documented by increasing subsistence and/or test net catches, prior to initiation of the commercial fishery. This management strategy provides for: 1) fish to become distributed throughout the Lower Yukon Area, and 2) passage of a segment of the run out of the lower river before the commercial fishery.

Based on large test fishing catches of chinook salmon in early June and unusually early run timing, the department announced that the commercial fishing season would open in the Lower Yukon Area between June 8-14. However, a number of buyers were not fully ready to handle large numbers of fish until June 9-10. In addition, several buyers reported that they did not plan to operate in District 2 prior to the opening of the fishery. Fortunately, a majority of buyers did participate in the lower portion of District 2. The 1996 Lower Yukon Area commercial salmon fishing season was opened by emergency order after approximately eight days of increasing subsistence and test net catches (Tables 5-7). District 2 was opened first with a 6-hour commercial period on June 9. District 1 followed on schedule with a 12-hour period on June 10. Both districts continued fishing on schedule (Monday, Thursday for District 1 and Sunday, Wednesday for District 2) through June 25 with unrestricted mesh size gillnets.

During the first period in Districts 1 and 2 the weather was particularly poor, which probably reduced the harvest and effort. After June 13, commercial harvests and test fishing CPUE were generally lower than average. Based on this information and the below average return of 6-year-old chinook salmon, fishing period duration was reduced to nine and then to six hours duration in District 2 beginning on June 23, and no further commercial fishing was allowed in District 1 after June 28. In addition, one normally scheduled fishing period in District 2 was pulled on June 26-27. The last commercial fishing period was on July 1 in District 2.

The total combined harvest of 86,851 chinook salmon for Districts 1 and 2 (Table 11) was 3% below the midpoint of the guideline harvest range of 90,000 fish and 16% below the 1991-1995 average harvest of 103,203 fish. All of the chinook salmon harvest was taken during twelve unrestricted mesh size fishing periods, except for six chinook sold during the fall season. The average weight of chinook salmon was 20.6 pounds.

Because of the poor chum salmon flesh market, the Lower Yukon Area summer chum harvest was below the lower end of the guideline harvest range. Preseason, several buyers had a chum salmon market and were interested in purchasing summer chum salmon. The department made an attempt to establish a fishing period with six inch or less mesh size as early as June 11-12 to target summer chum salmon. However, declining market conditions precluded targeting summer chum salmon for the entire fishing season. The total combined commercial summer chum salmon harvest in District 1 and 2 of 123,233 fish (Table 11) was 39% below the recent 5-year average harvest of 202,870 fish and 51% below the lower end of the guideline harvest range of 251,000 summer chums for Districts 1 and 2. All of the summer chum were harvested during twelve unrestricted mesh size fishing periods. The average weight of summer chum salmon was 7.8 pounds.

A new regulation adopted by the Alaska Board of Fisheries took effect this fishing season which reduced the maximum depth of commercial gillnets in the Lower Yukon Area. The maximum depth was decreased to 45 meshes for gillnets of larger than 6-inch mesh size and to 50 meshes for gillnets of 6-inch or smaller mesh size. It is not known what affect this regulation had on the commercial harvest. There was a mixed response from fishers regarding the effect of this regulation change ranging from a minimal impact to a large impact on harvests.

District 3

Because of the declining salmon flesh markets, District 3 was opened to commercial fishing for the taking of summer chum salmon for the sale of roe after interest was expressed by fishermen and buyers (Table 7). District 3 opened with a 6 hour commercial period on 5 July and ended with a 12 hour commercial period on 12 July. A total of 935 pounds of summer chum salmon roe was sold from a reported harvest of 1,534 fish. No chinook salmon were sold in District 3.

District 4

In response to the early run timing in 1996, the department opened subsistence fishing by emergency order in Subdistrict 4-A for chinook salmon with drift gillnets 5 to 11 days earlier than the dates set in regulation. Additionally, Subdistricts 4-B and 4-C had uninterrupted subsistence fishing allowed by emergency order until 24 hours before the commercial fishing season opened.

District 4 was opened to commercial salmon fishing on June 23 (Table 8). Three 12-hour fishing periods were scheduled for the first week of the season in Subdistrict 4-A. This was the second season during which a three 12-hour period per week fishing schedule was established. This schedule worked well for fishers and buyers. However, because of the early run timing of chinook salmon, subsistence fishermen requested more fishing time. A total of 18 hours of additional subsistence fishing time was allowed the first week of the commercial season by emergency order. Additionally, two commercial fishing periods per week were allowed the remainder of the season in order to increase subsistence fishing time. Because of the large summer chum salmon run and low harvest in the Lower Yukon Area, a large harvestable surplus of summer chum salmon was available in Subdistrict 4-A and in the Anvik River Management Area. Because of this large surplus of summer chum salmon, the sale of roe in Subdistrict 4-A and the Anvik River Management Area were allowed to reach near the roe caps. A total 181,050 pounds of summer chum salmon roe were sold in Subdistrict 4-A. Subdistrict 4-A has a roe cap of 183,000 pounds. The total estimated commercial harvest was 356,938 summer chum salmon.

The sale of 37,822 pounds of summer chum salmon roe in Subdistricts 4-B and 4-C (Table 8) was the second largest on record. The total estimated harvest of 71,991 fish was allowed to exceed the guideline harvest range based on the summer chum salmon escapements documented in the Anvik, Kaltag, Nulato, and Gisasa Rivers and Clear Creek, and reports of atypically large harvests of summer chum salmon in Subdistricts 5-A, 5-B and 5-C. Early run timing and poor fishing conditions led to a below average total estimated harvest of 137 chinook salmon in Subdistricts 4-B and 4-C. A total of four 48-hour fishing periods were allowed.

Anvik River Management Area

This was the third consecutive year commercial fishing for summer chum salmon has been allowed in the lower 12 miles of the Anvik River (Figure 19). In the Anvik River Management Area, a three 12-hour period per week fishing schedule was maintained throughout the entire season (Table 8). Additionally, fishing periods were scheduled concurrently with Subdistrict 4-A openings. Permit holders fishing in the Anvik River were not limited to the amount of chum salmon in the round or pounds of roe per period. A total of 76,318 pounds of summer chum roe were sold in the Anvik River Management Area, which was below the roe cap of 100,000

pounds. Prior to the fishing season, the Alaska Board of Fisheries increased the roe cap for the Anvik Management Area from 50,000 to 100,000 pounds. The total estimated commercial harvest was 84,663 female summer chum salmon. The use of hand beach seine and purse seine gear allowed for the release of male chum and chinook salmon. The management strategy to divert fishing effort from the mainstem Yukon River in Subdistrict 4-A to the Anvik River appeared to work well. The number of permit holders that fished in the Anvik River during concurrent periods with Subdistrict 4-A ranged from 3 to 16 and averaged 9.

District 5

In District 5, chinook salmon is the primary species of commercial value during the early season. Summer chum salmon do not contribute substantially to the commercial harvest because of the timing of the fishery, lower availability, poor flesh quality, and the high transportation costs to market.

The commercial fishing season was opened in Subdistricts 5-A, 5-B, and 5-C on 26 June, after the chinook salmon run was believed to be well distributed throughout these subdistricts. Only two fishing periods were allowed in these subdistricts because of the below average harvest taken during the second period and requests by fishermen to allow more subsistence fishing time for meeting their subsistence needs. It appeared that the early run timing, low water conditions, and presence of large numbers of summer chum salmon affected fishing success for chinook salmon in Subdistricts 5-A, 5-B, and 5-C. The total estimated chinook harvest of 2,309 fish in Subdistricts 5-A, 5-B, and 5-C (Table 9) was slightly below the lower end of the chinook salmon guideline harvest range of 2,400 to 2,800 fish.

Commercial fishing in Subdistrict 5-D commenced on July 2 (Table 9). Three 36-hour fishing periods were allowed in Subdistrict 5-D. The Subdistrict 5-D harvest of 448 chinook salmon was within the guideline harvest range of 300 to 500 chinook salmon. Additionally, 302 pounds of summer chum salmon roe were sold in District 5.

District 6

A total estimated commercial harvest of 447 chinook salmon was taken in District 6 (Table 10). A total of 22,360 summer chum salmon in the round and 18,332 pounds of summer chum roe were sold. The total estimated harvest of 46,890 summer chum salmon exceeded the upper end of the guideline harvest range of 13,000 to 38,000 fish. A majority of summer chum salmon sold in the round were males. Management of the fishery was primarily based on Chena and Salcha River tower counts and aerial survey results. Seven 42-hour fishing periods were allowed. The first period was directed at chinook salmon and the remaining periods were directed at summer chum salmon. It was apparent that because of the early run timing of chinook salmon, the majority of the run had passed prior to the commercial fishery in District 6.

Fall Chum and Coho Salmon

There are a limited number of tools available to assess the fall chum salmon return inseason in the lower Yukon River. Under the current management plan which identifies run passage levels at which specific management actions are triggered, the Pilot Station sonar project has served as the primary tool for inseason management of the fall season, and provided daily and cumulative passage estimates for fall chum and coho salmon. In 1996, the Pilot Station sonar project, located at river mile 123, was operated to provide technical training, and passage estimates were not made. The absence of Pilot Station sonar as an inseason passage estimate tool in 1996 required a more conservative management strategy in the lower Yukon River.

The preseason projection was primarily used for management purposes during the early portion of the fall chum salmon run July 16-31, and no fall season commercial fishing was allowed during this time period. However, as of August 3, the department's test set gillnets, located near the mouth of the Yukon River, had a cumulative catch per unit effort (CPUE) of 16.4 (Appendix B.16 and B.17), which was above the historical average CPUE of 11.4 for this date. Based on average run timing, nearly half of the fall chum salmon return would have passed the Lower Yukon Area test fishery by this date.

The timing of the 1996 fall chum salmon run was unusual. The department's Lower Yukon Area test set gillnet cumulative CPUE only includes chum salmon that enter the Yukon River after July 15 as fall chum salmon. Chum salmon that enter prior to July 16 are considered summer chum salmon, although it is recognized that some fall chum salmon enter the Yukon River prior to that date, and some summer chum salmon enter after July 15. Analysis of subsistence catch reports and information from escapement monitoring projects, however, made it apparent that in 1996, fall chum salmon had entered the Yukon River in greater abundance prior to July 16 than typical. When reviewing the lower Yukon River set gillnet test fishery information inseason, managers took into account the early component of the fall chum salmon run that had entered prior to July 16, but was not reflected in the cumulative test fishery CPUE.

By early August, based on lower Yukon River set gillnet test fishery information, the early component of the fall chum salmon run that had entered prior to July 16, and favorable subsistence catch reports and age composition information, it was determined that the 1996 fall chum salmon return was above preseason projection. It was also determined that the 1996 fall chum salmon return could provide for a fall chum salmon commercial harvest toward the lower end of each district's guideline harvest range.

As the run progressed, additional escapement and monitoring information became available. In 1996, indicators suggested that individual escapement goals and subsistence needs in some districts or subdistricts would be achieved. In these areas the targeted commercial harvest was raised to a higher level than the lower end of their respective guideline harvest range. However, in 1996 as in 1995, marketing difficulties, a lack of buyers, limited processing or tendering capacities, limitations on when or where processors could handle fish, the very limited flesh market, low prices, and low effort contributed to a low salmon harvest in many areas.

A total of 88,342 fall chum salmon were sold in the round and 14,671 pounds of fall chum salmon roe were sold for an estimated harvest of 105,630 fall chum salmon in 1996 (Tables 4-11). The 1996 estimated harvest was slightly below the recent (1991 to 1995) five-year average of 113,000 fall chum salmon. All districts or subdistricts harvested at least to the low end of their respective guideline harvest range except for Subdistricts 4-B and 4-C. In Subdistricts 4-B and 4-C, with 2,918 fall chum salmon sold, the harvest was 42% below the low end of the guideline harvest range of 5,000 fall chum salmon. Low effort and limited processing capacity were the primary reasons for the low fall chum salmon harvest in Subdistricts 4-B and 4-C.

Coho salmon have a later, but overlapping run timing with that of fall chum salmon (Appendix B.16-B.18). Comprehensive coho salmon escapement information is lacking within the Yukon River drainage. Coho salmon return primarily as age-4 fish. Based on limited coho salmon escapement surveys in 1992, and assuming average survival rates, a below average return of coho salmon was projected in 1996. No guideline harvest ranges have been established for coho salmon. Coho salmon are incidentally harvested in the directed commercial fall chum salmon fishery. A total of 52,643 coho salmon were sold in the round and 4,829 pounds of coho salmon roe were sold for an estimated harvest of 55,982 coho salmon in 1996 (Tables 11). The majority (approximately 92%) of the coho salmon were harvested in Districts 1 and 2.

The number of salmon harvested in the 1996 Yukon Area subsistence and personal use fisheries were estimated from survey and fishing permit programs. Additionally, the numbers of fish given to the public for subsistence use from various test fish projects throughout the drainage were documented. Combining survey, permit, and test fishery information, an estimated total of 43,521 chinook, 103,408 summer chum, 129,222 fall chum, and 30,510 coho salmon were harvested by 1,257 subsistence and personal use fishing households in 1996 in the Alaskan portion of the Yukon River drainage (excluding Hooper Bay and Scammon Bay) (Table 13). An estimated total of 43,306 chinook, 102,503 summer chum, 128,866 fall chum, and 30,312 coho salmon were harvested for subsistence purposes in 1996 in the Alaskan portion of the Yukon River drainage (excluding Hooper Bay and Scammon Bay) (Appendix D.1-D.4). The chinook salmon harvest was 16% below the 1991-1995 average harvest of 51,299 fish (Appendix D.1); the summer chum salmon harvest (excluding commercial related harvest) was 10% below the recent 5-year average harvest of 116,658 fish (Appendix D.2); the fall chum salmon harvest was 10% above the recent 5-year average harvest of 116,722 fish (Appendix D.3); and the coho salmon harvest was 15% below the recent 5-year average of 35,000 fish (Appendix D.4).

The coastal subsistence harvests near the villages of Hooper Bay and Scammon Bay were estimated to include 2,365 chinook, 22,235 summer chum, 392 fall chum, and 92 coho salmon (Table 13, and Appendix D.5). An estimated total of 45,886 chinook, 125,643 summer chum, 129,614 fall chum, and 30,602 coho salmon were harvested by 1,421 subsistence and personal use fishing households in 1996 in the Yukon Area including Hooper Bay and Scammon Bay (Table 13). A chum salmon tagging study conducted in 1986 (Kerkvliet 1986) indicated that residents of the Yukon Area coastal village of Hooper Bay harvest summer chum salmon bound primarily for the Yukon River. Additional information regarding the 1996 subsistence and personal use harvests in the Yukon Area can be found in Borba and Hamner, 1997.

Survey Program

The majority of villages within the Yukon Area have no regulatory requirements to report their subsistence salmon harvest. To estimate the salmon harvest from these villages the department has implemented a voluntary survey program. The 1996 survey program utilized subsistence catch calendars, postseason household interviews, and postseason household telephone interviews and postcards. Stratified random sampling techniques were used to select Yukon Area households to be interviewed during the 1996 postseason survey. Based on survey information collected in 1996, an estimated 1,144 households harvested an estimated total of 38,592 chinook, 105,921 summer, 66,232 fall chum, and 14,460 coho salmon in the survey portion of the Yukon Area including the coastal villages of Hooper Bay and Scammon Bay (Table 13).

Subsistence and Personal Use Permit Program

A portion of the Yukon Area requires subsistence or personal use fishermen to obtain an annual household permit prior to fishing. These areas include the Tanana River drainage, the Yukon River near the Yukon River bridge between Hess Creek and the Dall River, and the upper portion of District 5 between the upstream mouth of Twenty-Two Mile Slough and the U.S./Canada border. In these areas, the fishermen are required to document their harvest on the household permit. Permits are to be returned to the department with household harvest information. A total of 518 subsistence and personal use permits were issued in 1996. Some households were issued separate Tolovana River pike and salmon fishing permits. A total of 486 subsistence and personal use permits had been returned to the department as of April 10, 1997. The number of permit holders and the reported harvest by household permits does not include Stevens Village. In Stevens Village, the permit information was used to supplement the postseason survey of the village. A total of 277 permit holders indicated they fished in

1996. The reported harvest from permits totals 5,939 chinook, 12,394 summer chum, 60,411 fall chum, and 15,134 coho salmon (Table 13). Historical subsistence permit harvest information is summarized in Appendix D.6 and D.7. The 1996 personal use salmon harvests for the Alaskan portion of the Yukon River drainage by 129 fishing permit holders were estimated to be 215 chinook, 905 summer chum, 356 fall chum, and 198 coho salmon (Table 14). Historical personal use harvests are presented in Appendix D.8 through D.10.

Subsistence Salmon Use from Test Fisheries

From the test fishery projects throughout the drainage, a total of 1,355 chinook, 7,328 summer chum, 2,971 fall chum, and 1,008 coho salmon were given away to households for subsistence use in 1996. Residents of the villages of Emmonak, Kotlik, Mountain Village, Pilot Station, and Fort Yukon were the primary recipients of the fish given away from the test fisheries. These salmon were assumed to replace fish that would have been obtained through normal fishing activities; therefore salmon given away by the test fisheries were added to the village subsistence harvest of the recipient households.

Subsistence Salmon Use from Commercial Fisheries

A regulation adopted by the Board of Fisheries in February 1992, requires fishermen to report the number of salmon caught but not sold during commercial fishing periods on fish tickets. Compliance with this regulation is poor. A total of 7 chinook, 1,963 summer chum salmon were reported caught but not sold during commercial fishing periods on fish tickets in the Lower Yukon Area in 1996. In the Upper Yukon Area, 274 chinook, 1,431 summer chum, 2,660 fall chum and 0 coho salmon were reported caught but not sold.

Canadian Fisheries 1996

This summary of the fisheries in the Canadian portion of the Yukon River drainage is exerpted from material provided by the DFO.

The 1996 management plan for Canadian fisheries on the Yukon River was formulated to reflect the understandings reached in the Interim Yukon River Salmon Agreement. Accordingly, the guideline harvest ranges, border passage, and spawning escapement goals for Canadian chinook and fall chum salmon, established in the interim agreement, provided the foundation for the 1996 management plan.

A total of 19,672 chinook, 24,354 fall chum, and 41 coho salmon were estimated to have been harvested by Aboriginal, domestic, sport, and commercial fisheries in the Canadian portion of the Yukon River drainage in 1996 (Table 15 and Appendix A.19, A.21, and A.22). The combined harvest in the Canadian mainstem Yukon River was 19,606 chinook and 21,329 fall chum salmon. The harvest at Old Crow in the Porcupine River drainage was 66 chinook, 3,025 fall chum, and 41 coho salmon.

Commercial Fishery

The Canadian Yukon River commercial fishery harvested a total of 10,164 chinook and 20,069 fall chum salmon in 1996 (Table 15). The chinook harvest was 8% below the recent chinook cycle average (1990-1995) catch of 11,105 chinook and the chum harvest was 16% below the recent cycle average (1992-1995) of 23,846 chum. A total of 28 commercial licenses were issued in 1996, two less than in 1992 through 1995. The

maximum number of commercial fishermen active during any one week of the chinook season was 19. During the fall chum season the highest number of fishermen in any one opening was only 9. Most of the commercial chinook harvest was taken by set gillnets, only three fish wheels were in use during the chinook season. Although as many as 10 fish wheels have been used during the fall chum season in 1992 and 1993, there were only 4 fish wheels operated during the 1996 fall chum season.

Chinook Salmon

Some of the major elements of the chinook salmon management plan implemented in Canada for 1996 included:

1) a minimum escapement goal of 28,000 chinook as agreed by the Yukon River Panel in the spring of 1996. This new goal, established for the 1996-2001 period as part of a Canadian mainstem Yukon River chinook rebuilding plan, replaced the 1990-1995 stabilization goal of a minimum 18,000 chinook salmon;

2) a total Canadian mainstem Yukon River guideline harvest range for all users of 16,800 to 19,800 chinook salmon, which was the range agreed to in the interim agreement;

3) a commercial guideline harvest range of 8,900 to 11,900 chinook, with a preseason target of 10,400 chinook. Based on the preseason forecast for an average return, the catch was expected to be close to the mid-point of the range; and

4) a one day per week fishery for the initial two weeks of the season, followed by a three day opening subject to run assessments.

The commercial fishery opened on Monday, July 1, 1996 for 24 hours. According to the fishing plan, the fishery was to have opened the Monday following the capture of the first fish in the DFO fish wheels or Aboriginal fishery; the first chinook was caught in DFO fish wheels June 24, just one day later than the earliest date of capture on record (1993).

The preliminary total commercial chinook catch of 10,164 fish was 2% below the inseason target of 10,400 chinook, which was the mid-point of the commercial guideline harvest range of 8,900 to 11,900 chinook and the pre-season expected harvest. The preliminary postseason estimate of the border escapement indicated a Canadian commercial harvest rate of 21% on chinook salmon in 1996 compared to the recent cycle average harvest rate of 24% (1990-1995).

Based on fishery performance indicies, i.e. commercial chinook CPUE, the run appeared to be below average in magnitude and one to two weeks early in timing. The cumulative CPUE was 187 chinook/fishermen/day, 18% below the recent cycle average of 228 chinook/fisher/day. Fishing effort during the chinook season was 28% above average (341 boat-days versus an average of 265 boat-days).

Normally, fishery performance indices of lower catches, lower CPUE yet higher effort levels would be indicative of below average run strength. However, based on preliminary mark-recapture analysis and spawning escapement survey results, this did not appear to hold true in 1996. The reason for this was likely related to a combination of early run timing and disproportionate fishing effort relative to stock abundance; stock abundance and fishing effort were somewhat skewed in opposite directions. This situation was compounded by the fishery opening schedule adopted in the management plan which purposely limits fishing effort early in the season. The result of this regime was that only 15% of total commercial fishing effort during the chinook season occurred during the first quarter of the run. Based on lagged catch data from DFO fish wheels, it is estimated that approximately 25% of the run had passed upstream of the

Dawson area fishery by the end of the second fishing period. The cumulative fishing effort through July 12, the end of the second fishing period, was 50 boat-days which accounted for 15% of the total fishing effort for the chinook fishery of 341 boat-days. Poor fishing conditions may also have contributed to below average catch rates in the fishery. It was reported by some fishermen that high debris load periods frequently occurred during the chinook openings. However, whether the incidence of high debris loading was higher than normal is not known.

Fall Chum Salmon

The chum salmon run to the Canadian mainstem Yukon River was expected to be below average in 1996 due to the below average spawning escapement of 49,100 chum in 1992. The return of five-year-olds was expected to be above average based on the above average escapement of 78,500 chum in 1991. The 1996 chum salmon management plan was developed to address the expectation of a below average run and the objectives of the three-cycle rebuilding plan that has been agreed to in the interim agreement. Accordingly, the plan included the following components:

1) an escapement goal of 65,000 Canadian mainstem Yukon River chum salmon. This goal was developed by the U.S./Canada negotiation process to reflect a three-cycle rebuild of the principal brood year escapement of 49,100 chum in 1992 to a long term goal of >80,000 chum;

2) a guideline harvest range for all Canadian mainstem Yukon River fisheries of 23,600 to 32,600 chum as agreed to within the interim agreement;

3) a commercial guideline harvest range of 20,700 to 29,700 chum salmon with a preseason target of 20,700 chum; the lower end of the range was recommended in view of the below average expected return; and

4) reduced fishing time for the initial weeks of the chum season, followed by potentially longer openings commencing early in September depending on assessments of run strength and the guideline harvest ranges.

In most years, the third week of August (through week 34) marks the transition from the chinook season to the chum season. Prior to this, chum salmon abundance is generally low although there is some indication of a small early run which peaks in early August. In 1996, the commercial catches of chum salmon prior to week 35 were far above average. For example, the cumulative catch through week 34 in 1996 totaled 1,098 chum compared to the previous ten-year average catch for the same period of 201 chum. The cumulative CPUE through week 34 in 1996 was approximately 4.5 times the ten-year average. The first chum salmon was caught during the July 9-12 opening (week 28), the earliest on record. Similarly, chum salmon catches in the Porcupine River were first reported at about the same time, the earliest any of the Vuntut Gwitchin elders could remember. At the DFO fish wheels, the first chum appeared on July 6. Usually chum salmon are not caught in the fish wheels until July 21; prior to 1996, the earliest date of capture on record was July 15. Through week 34 (August 24) a record total of 845 chum had been caught in the fish wheels compared to the previous ten-year average of 132 chum; the previous record was 276 chum in 1989.

The strong early showing of chum salmon spelled the beginning of what should have been an excellent chum salmon fishery. However, market conditions were dismal resulting in reduced effort throughout most of the chum season. The preliminary total commercial chum harvest of 20,069 fish was 3% below the lower end of the commercial guideline harvest range of 20,700 to 29,700 chum salmon. Based on preliminary tag recovery data, the harvest rate in the commercial fishery was approximately 14% compared to the 1992-1995 cycle average of 22%. Total fishing effort during the chum season (from week 35 on) was

128 boat-days in 1996, the second lowest on record and 12% below the 1992-1995 average of approximately 145 boat-days. The total number of days fished during this period, i.e. after week 35, was 22 days compared to the 1992-1995 average of 12 days.

The run strength based on cumulative commercial fishery CPUE was the third highest on record and was 18% above the previous cycle average. The cumulative DFO fish wheel catch of 4,525 chum salmon was the second highest on record, and was 76% above the average over the previous two cycles. The preliminary mark-recapture estimate, was the second highest on record and was approximately 27% above average. Run timing in the commercial fishery appeared about one week early and was slightly bimodal with peaks in weeks 36 and 39. Run timing based on DFO fish wheel catches also appeared to be earlier than normal with the peak catch occurring on September 5. Normally, the peak catch doesn't occur until September 14.

Canadian Aboriginal, Domestic and Sport Fisheries

In 1996, a multi-year comprehensive survey of the Aboriginal fishery was initiated as part of the implementation of the Yukon Comprehensive Land Claim Umbrella Final Agreement. The project entitled: *The Yukon River Drainage Basin Harvest Study*, is being conducted by LGL Ltd. Environmental Research Associates, and primarily involves intensive inseason surveys of harvest and effort in the fishery throughout the Canadian mainstem Yukon River drainage, excluding the Porcupine drainage. Harvests from the Old Crow area were determined from locally conducted, post season interviews.

The estimated 1996 total Canadian mainstem Yukon River chinook salmon catch in the Aboriginal fishery was 8,451 fish, 14% above the 1991-1995 cycle average of 7,394 chinook. The estimated chinook harvest at Old Crow in 1996 was 66 fish, 80% below the previous cycle average of 326 chinook salmon. The estimated 1996 Aboriginal harvest of Canadian mainstem Yukon River chum salmon is 1,260 fish compared to the recent cycle average of 2,764 chum salmon. A total of 3,025 chum salmon were harvested at Old Crow. The average catch from this area is approximately 2,700 chum salmon. Coho harvests in Canada are generally limited to the Porcupine River where they are taken in the Old Crow Aboriginal fishery in late October and November. An estimated 41 coho salmon were harvested in 1996.

Effort level was low in the 1996 domestic fishery with only five fishermen reporting harvests. The total harvest of 141 chinook salmon was well below the previous cycle average of 278 chinook salmon. No chum salmon were reported caught in the fishery in 1996; chum salmon have not been recorded in the domestic fishery since 1989.

Prior to 1995, it was assumed that approximately 300 chinook were harvested annually by sport fishermen in Canadian sections of the Yukon River basin. The estimate for 1995 was increased to 700 chinook based on a number of observations by Fishery Officers that fishing pressure was much higher than in previous years. This was primarily due to the excellent return of chinook salmon in 1995. In 1996, a creel census was initiated at a well established sport fishery located at the confluence of Tatchun Creek and the Yukon River. This was the first year that a specific sport fishery data collection program has been conducted within the Canadian section of the Yukon River basin.

Preliminary results from the creel census included a catch estimate of 846 chinook salmon of which 395 fish were kept; the remaining 451 chinook, or 53% of the fish caught, were released. It was estimated that an additional 30 chinook were kept that were unaccounted for in the census. The total harvest was therefore estimated to be 425 chinook. Since there was no creel census previously conducted at Tatchun Creek, it is

not possible to determine how catch and effort in 1996 compares with previous years. A national sport fishing survey, conducted in 1990, included information about the distribution of salmon fishing effort in the Yukon. Unpublished results indicated that the Tatchun Creek sport fishery accounted for approximately 50% of the total recreational catch of chinook salmon in the Yukon River watershed in Canada. Based on the assumption that a similar harvest distribution occurred in 1996, the total recreational harvest of chinook salmon in the Canadian section of the Yukon drainage was estimated to be 850 fish.

Escapement 1996

One of the most comprehensive programs to monitor salmon spawning escapements throughout the Yukon River drainage was implemented in 1996. This was made possible due to both fiscal and personnel assistance from several other agencies and organizations. Comprehensive escapement assessment projects funded and operated by ADF&G in 1996 included monitoring chum salmon escapements to the Anvik, Toklat and Sheenjek Rivers using hydroacoustic techniques. While replicate ground surveys and stream life data were used to estimate abundance of chum salmon spawners in the Delta River, counting platforms were used by the Sport Fish Division to monitor timing and abundance of both chinook and chum spawners in the Chena and Salcha Rivers. Although the department operated the Yukon River sonar project at Pilot Station to provide daily estimates of salmon passage by species annually since 1986, excluding 1992, that project was operated in only a training mode in 1996 due to under-staffing problems (Appendix E.3). The department also conducted a second year, mark-recovery study in the upper Tanana River in 1996 through a cooperative agreement with Bering Sea Fisherman's Association (BSFA). The major objective of the study was to estimate the population of fall chum salmon in the Tanana River upstream of the confluence of the Kantishna River.

Projects funded and operated by USFWS to monitor salmon escapement in 1996 included weir operations on the East Fork Andreafsky, Gisasa, and South Fork Koyukuk Rivers as well as a hydroacoustic project on the Chandalar River. While the East Fork Andreafsky weir was operated to monitor summer chum and chinook salmon escapements, duration of the project was extended for a second year with assistance from BSFA, to provide information on timing and abundance of coho salmon. The Gisasa River weir was installed for the period mid-June through July to provide comprehensive escapement information on summer chum and chinook salmon. Similarly, the first of a 5-year weir operation was initiated by USFWS in the South Fork Koyukuk River to monitor timing and magnitude of salmon escapements (by species) during the period July through September. The 1996 Chandalar River operation consisted of using split-beam sonar techniques to monitor fall chum salmon escapements to that river.

Additional escapement assessment projects in the Alaskan portion of the Yukon River drainage, either jointly or entirely funded and operated by other organizations in 1996, included counting tower operations on the Nulato River, Kaltag and Clear Creeks and a weir operation on Beaver Creek. The Nulato River tower project was cooperatively operated by ADF&G and the Nulato Tribal Council (NTC), with funding provided by BSFA. While BSFA, in cooperation with USFWS, also operated a counting tower on Clear Creek, a tributary of the Hogatza River in the Koyukuk River drainage, the Kaltag Creek tower project was operated by the Alaska Cooperative Extension 4-H program with partial funding from BSFA. Results from all three of these projects were important in assessing spawning distribution of summer chum and chinook salmon in the middle portion of the Yukon River drainage during the 1996 season.

Projects conducted by the Canadian DFO in 1996 consisted of a mark-and-recovery project near Dawson to estimate the total number of mainstem Yukon River chinook and chum salmon passing the US/Canadian border into Yukon Territory. Site specific studies included manning an enumeration window and passage gate at

Whitehorse to monitor chinook salmon escapement upstream of Whitehorse as well as installing a weir in Wolf Creek to determine the portion of chinook salmon passing the fishway bound for that stream. Additionally, DFO operated a weir on the Fishing Branch River (Porcupine River drainage) to enumerate chum salmon escapement.

In addition to the above projects, the first year of a cooperative multi-year interagency study to evaluate the distribution, relative abundance, and run characteristics of upper Yukon River fall chum salmon was initiated. This first year of work focused on establishing methods for use in subsequent years. The USFWS conducted a mark-recapture study near Rampart to assess whether adequate samples could be collected in an attempt to generate total abundance estimates of fish passage. Concurrently, the NMFS placed a limited number of radio transmitters on chum salmon to determine tagging response, basic movement patterns, and to test some of the assumptions inherent in the mass mark and recapture study.

Remaining escapement information throughout the Yukon River drainage in 1996 was obtained primarily by aerial surveillance, although occasional ground surveys were also conducted. This included numerous aerial and ground surveys funded by BSFA and conducted by TCC in portions of the Nenana River drainage to increase knowledge on chum and coho salmon escapements to that area.

Overall, conditions for conducting aerial surveys throughout much of Interior Alaska during the chinook and summer chum salmon season were considered marginal because of rainy and windy conditions prevailing particularly in the lower Yukon River drainage. Further, most surveys which were successfully conducted were considered to be somewhat late due to early chinook and summer chum salmon run timing in 1996. In the Canadian portion of the drainage, DFO was successful in surveying all major chinook salmon index streams in Yukon Territory. While aerial and ground surveys made of fall chum and coho salmon spawning streams in the Alaskan portion of the Yukon River were confined to the Tanana River drainage in 1996, DFO was successful in flying surveys of most fall chum salmon index streams in Yukon Territory.

Escapement estimates obtained in 1996 are shown in Appendix E.2 while Figures 14 through 18 show major Yukon River tributary systems.

Chinook Salmon

Appendices E.4 and E.5 present historic chinook salmon escapement data for selected streams during the period 1961-1996. Chinook salmon escapement goals established by the Department for eight Alaskan streams, or index areas, are: East (>1,500) and West Fork (>1,400) Andreafsky, Anvik (>1,300 entire drainage or >500 Yellow River to McDonald Creek), North (>500) and South Fork (>800) Nulato, Gisasa (>600), Chena (>1,700), and Salcha (>2,500) Rivers.[2] These escapement goals are based upon aerial survey index counts which do not represent total escapement.

The overall Yukon River chinook salmon run in 1996 was considered to be no better than average. While escapement goals were achieved in the Tanana River drainage as well as the Canadian portion of the drainage, escapement goals in many tributary streams below the Tanana River, were likely not reached. For example, an

[2] These chinook salmon escapement goals resulted from a reevaluation of goals in March 1992. Although no escapement goals have been established for individual Canadian streams, an interim escapement goal of 33,000-43,000 chinook spawners for the mainstem upper Yukon River drainage (Yukon Territory) was established by the JTC in March 1987. However, a minimum rebuilding step escapement goal of 28,000 chinook salmon was established by the Yukon River Panel in April 1996. This goal, established for the period 1996-2001, replaced the 1990-1995 stabilization goal of >18,000 chinook salmon.

aerial count of 624 chinook salmon in the West Fork Andreafsky River was 55% below the minimum goal of 1,400 fish. Although the East Fork was not surveyed due to poor survey conditions, the weir count of 2,955 chinook salmon was only half of the number passed in 1995.

An aerial survey flown of the Anvik River mainstem index area on July 22 under good survey conditions, resulted in a count of 709 chinook salmon. This exceeded the mainstem index area minimum goal of 500 fish by 42%. However, the survey count for the entire river on the same day (including tributaries) was only 839 chinook salmon. This was 35% below the minimum goal of 1,300 fish for the entire drainage.

An aerial survey was conducted of a portion of the Nulato River on July 20 under fair survey conditions. Only 100 chinook salmon were counted in the South Fork, including that section of the main river below the confluence of the South Fork. The North Fork river was not surveyed due to poor weather. Aerial survey minimum escapement goals are 800 and 500 chinook salmon for the South Fork and North Fork Nulato River, respectively. The estimated number of chinook salmon passing the Nulato River tower in 1996 was only 756 fish. This estimate was 46% lower than the 1995 tower estimate of 1,412 chinook salmon.

Although no aerial survey was flown of the Gisasa River (Koyukuk River drainage) in 1996 due to unfavorable weather, the USFWS counted 1,952 chinook salmon passing the weir site. This was approximately one-half of the 1995 chinook salmon weir count (4,023) on this river.

The USFWS weir on the South Fork Koyukuk River operated during the period July 2 through September 19. However, the weir was out of service between July 28 and August 16 from high water conditions. A total of 1,232 chinook were counted with peak passage from July 3 through July 6.

Although no chinook salmon escapement goals have been established for other streams in the Koyukuk River, results of aerial surveys made on a few other tributaries in 1996 indicated escapements were marginal. For example, counts were 69 chinook salmon in Henshaw Creek and 95 in Jim River.

Since 1993, inseason assessment of chinook salmon escapement to the Tanana River drainage has been based on chinook salmon passing the Chena and Salcha River counting tower sites operated by ADF&G Sport Fish Division personnel. High and turbid water conditions hampered operations on both rivers in 1996. During the period July 8-28, towers were only operational for 17 days on the Chena River and 16 days on the Salcha River. Estimated passage during this period was 2,277 chinook salmon in the Chena River and 3,453 in the Salcha River. As a result of the incomplete tower estimates, a post season mark-recapture study was conducted to estimate spawner abundance in index areas of both rivers. Preliminary estimates of escapement were 6,833 and 7,958 chinook salmon for the Chena and Salcha River, respectively. Aerial surveys of the Chena and Salcha Rivers conducted on July 19 under fair survey conditions, resulted in chinook salmon counts of 2,112 and 4,800 fish in the index areas for each respective river, indicating that the escapement goals were achieved in both rivers. The Chena River count was 24% above the minimum goal of 1,700 chinook salmon, while the Salcha River aerial count was 92% above its minimum goal of 2,500 fish.

Observations on chinook spawning to other tributaries of the Tanana River drainage was limited in 1996 due to poor weather and survey conditions. A cursory fly-over of a portion of Barton Creek in the Toklat River drainage on July 25, resulted in a count of 111 chinook salmon. On the same day a poor survey of the mainstem Bearpaw River between Diamond and Glacier documented at least 107 chinook salmon present. Only 21 chinook were seen on a fair survey of Seventeen Mile Slough on July 25.

The Beaver Creek weir was operated by BLM between July 2 and September 25 in 1996. The project started later than anticipated and some interruptions were experienced in August from high water (about 2 weeks). A total of 192 chinook salmon were passed.

The preliminary DFO mark-and-recovery population estimate of chinook salmon entering the Canadian portion of the mainstem Yukon in 1996 was 47,955. Subtracting the estimated Canadian commercial and non-commercial harvest (excluding Old Crow) from this population estimate results in a spawning escapement estimate to Yukon Territory (excluding the Porcupine River drainage) of 28,349 chinook salmon. This level of escapement approximated the goal of 28,000 chinook salmon set by the Yukon River Panel in the spring of 1996. Yukon Territory chinook salmon spawning streams surveyed by DFO in 1996 included a ground survey of Tatchun Creek, and aerial surveys of Tincup Creek (Kluane River drainage), the Little Salmon, Ross (Pelly River drainage), Big Salmon, Nisutlin and Wolf Rivers (Teslin River drainage). Results from these surveys revealed escapements ranged from between approximately 45% to 220% above the 1991-1995 average escapements for these streams. Those escapements observed in index areas of the Little Salmon, Big Salmon, and Wolf Rivers were the highest on record.

The number of chinook salmon which returned to the Whitehorse fishway in 1996 totaled 2,958 of which 15% possessed an adipose-clip from previous hatchery releases. The total number of chinook salmon spawned for hatchery brood stock in 1996 was 77 females and 215 males. A total of 92 adult chinook salmon were passed through Wolf Creek weir, a small tributary of the Yukon River located several kilometers upstream of the Whitehorse Rapids fishway.

Summer Chum Salmon

Appendix E.6 presents historic summer chum salmon escapement data for selected streams during the period 1973-1996. Escapement goals have been established for six major summer chum spawning streams as follows: East (>109,000) and West Fork (>116,000) Andreafsky, Anvik (>500,000), North Fork Nulato (>53,000), and in the Hogatza (Clear Creek at >8,000 and Caribou Creek at >9,000) Rivers. An additional escapement goal of >3,500 summer chum salmon exists for the Salcha River in the Tanana River drainage. With exception of the Anvik River objective which is a minimal goal of total spawning abundance based on sonar, all other escapement goals are based upon aerial survey observations during periods of peak spawning.

The summer chum salmon run to the Yukon River in 1996 was judged to be average to above average with adequate escapements achieved throughout the Yukon River drainage for the third consecutive year. However, severe flooding in August 1994, particularly in the Koyukuk River drainage, and the lack of snowfall during the winter of 1995-1996 may affect the production from the 1994 and 1995 parent years. Catch and escapement information in 1996 indicated that summer chum salmon spawning stocks from the Koyukuk River drainage and upstream, including the Tanana River drainage were very strong, whereas the return of spawning stocks downstream of the Koyukuk River drainage were generally lower than that observed in 1994 and 1995. In the Andreafsky River, a total of 108,450 summer chums were counted past the East Fork weir of which 2,978 chum were counted from August 1 through September 16. Total passage was 39% lower than the 1995 weir count and lower than the aerial escapement goal of 109,000 chum salmon for this tributary. However, it should be noted that the aerial escapement goals for both the East Fork and West Fork Andreafsky River are under further review at this time. No aerial surveys could be flown of the Andreafsky River in 1996 due to poor weather/survey conditions. By comparison, the sonar estimated escapement of 933,240 summer chum salmon in the Anvik River in 1996, while being approximately 30% lower than that estimated in 1995, was 87% above the minimum goal of 500,000 summer chum salmon for that stream.

Summer chum salmon escapements between Anvik and Koyukuk were judged to be near average based upon observations made in the Rodo River, Kaltag Creek and Nulato River. An aerial survey flown of the Rodo River on July 20 under fair survey conditions resulted in an estimate of 4,380 summer chum salmon. Estimated escapement in Kaltag Creek was 51,269 summer chum salmon for the period June 20 through July 21. No summer chum salmon escapement goal exists for this stream. Estimated summer chum escapement into the Nulato River (both forks combined) was 129,694 based upon expanded tower counts. This estimate is 45% lower than that made in 1995. An aerial survey was flown on July 20 of the South Fork Nulato River, including that mainstem section below the "forks", but was incomplete and conducted well after peak spawning. The North Fork was not surveyed in 1996.

In the Koyukuk River drainage, a total of 157,589 summer chum salmon were counted past the Gisasa River weir, approximately 16 % higher than the 1995 weir count. Summer chum salmon escapement in Clear Creek (Hogatza River drainage) was estimated as 100,912 salmon based upon tower observations. This level of escapement was similar to that observed for this stream during the first year of tower operations in 1995. A helicopter survey of Caribou Creek made by BLM on July 13 revealed the minimum escapement goal (>9,000) to that stream was achieved. An estimate of 10,470 chum salmon was made on that survey. In addition, BLM also documented several thousand summer chum salmon spawning in portions of the upper Hogatza River drainage on July 13. Fish were observed in portions of the mainstem river as well as in several miles of Klikhtentozna Creek. These latter observations resulted in nominations to the state's *Catalog of Waters Important for Spawning, Rearing or Migration of Anadromous Fishes*, extending the range of summer chum salmon in this drainage. Other summer chum salmon escapements documented in portions of the upper Koyukuk River drainage in 1996 included 12,890 chum salmon in Henshaw Creek estimated from an aerial survey on July 24, and 37,450 chum salmon passing the South Fork Koyukuk River weir during the period July 2 through July 28.

In the Tanana River drainage frequent interruptions from high and turbid water conditions hampered tower operations in 1996. During the period July 8-28, towers were only operational for 17 days on the Chena River and 16 days on the Salcha River. Passage estimates during this period were 12,810 chum salmon on the Chena River and 74,827 chum salmon on the Salcha River. The Chena River estimate was more than double the average for the same period from previous years. The Salcha River tower estimate was the highest on record. An aerial survey was conducted on both rivers on July 19. However, the surveys were rated "poor" for chum salmon because it was conducted prior to peak of spawning. Results from these surveys resulted in summer chum estimates of 2,061 and 9,722 in respective index areas of the Chena and Salcha Rivers. The Salcha River estimate was the second highest on record and indicated the aerial survey-based minimum escapement goal of 3,500 summer chum salmon was achieved.

Fall Chum Salmon

Appendix E.7 presents historic fall chum salmon escapement data for selected streams since the early 1970s. The most complete database on Yukon River fall chum salmon escapements dates back to the early 1970s and exists for four streams: Delta, Toklat, Sheenjek, and Fishing Branch Rivers. Minimum escapement goals of total spawning abundance to these streams are 11,000, 33,000, 64,000, and 50,000 fall chum salmon, respectively. Additionally, annual estimates of border passage and subsequent spawning escapement also exist for Canadian fall chum stocks in the upper mainstem Yukon River. The minimum escapement goal for those stocks is 80,000 fall chum salmon (border passage less harvest).[3]

[3]The U.S. and Canada has negotiated a twelve year rebuilding plan, beginning in 1990 and ending after the 2001 season, for Canadian Yukon River mainstem fall chum salmon. The objective of the plan is to rebuild the stock by achieving a spawning escapement of 80,000 or more fall chum salmon for all (four) brood years by the

The overall run of Yukon River fall chum salmon in 1996 was evaluated inseason to be substantially greater than the preseason projection of 631,000 fish. Inseason assessment of lower and upper river test fish data and escapement information suggested that the non-Tanana River run component in particular, was similar in magnitude to that realized in 1995. Subsequent escapement estimates made for the Chandalar River, Sheenjek River, Fishing Branch River, and Canadian mainstem Yukon River stocks were in fact all very similar in magnitude to the large escapements realized in 1995.

By comparison however, test fishery results from the south bank Yukon River near Tanana as well as those in the Tanana River, suggested Tanana River fall chum salmon run size to be comparatively smaller. The preliminary mark-and-recapture chum salmon abundance estimate for the upper Tanana River (~135,000), upstream of the Kantishna River, was less than half the 1995 abundance estimate (~268,000 chum salmon) for those stocks. Although achieved in the Delta River, the escapement goal was not achieved in the Toklat River in 1996.

Assessment of escapement to the Porcupine River drainage was based upon observations made in the Sheenjek and Fishing Branch Rivers. The sonar-estimated escapement in the Sheenjek River in 1996 was 247,965 chum salmon for the 57-day period July 30 through September 24, the largest on record. This is nearly 3.9 times the minimum escapement goal of 64,000. The minimum escapement goal for the Fishing Branch River (50,000) was achieved for the third consecutive year and the third time since 1985. A total of 77,278 chum salmon were enumerated through the weir during the 65-day period of August 19 through October 22. This was the largest escapement observed in the Fishing Branch River since 1979.

Other indicators that good fall chum escapements were realized to other areas throughout the Yukon River drainage in 1996, excluding the Tanana River, were evident. For example, the USFWS-operated hydroacoustic project on the Chandalar River, although in its third year of development using split beam sonar, resulted in a passage estimate of 203,683 fall chum salmon for the 45-day period August 8 through September 21. The USFWS also passed 21,651 chum salmon past South Fork Koyukuk River weir in 1996 during the period August 17 through September 19. High water prevented weir operations for most of the last week of August as well as for a two- to three-week period prior to August 16. Although 1996 was the first year a weir was operated on this river, the minimal passage estimate of 21,651 fish compares to a sonar passage estimate of approximately 19,500 chum salmon from August 2 through September 25 in 1990.

Tanana River fall chum salmon escapement in 1996 was evaluated by observations made in the Toklat and Delta Rivers. In brief, escapement to the Tanana River appeared to be comparatively lower than that realized to other areas of the Yukon River. Population estimates of fall chum escapement for the Toklat River have historically been expanded aerial or ground survey counts made during periods of peak spawning at Toklat Springs, using spawner residence data collected from the Delta River stock. However, since 1994 more comprehensive assessment of escapement to the Toklat River has been made annually using hydroacoustic techniques, with salmon passage estimates apportioned to species based upon subsequent surveys of Toklat Springs.

In 1996, a preliminary sonar passage estimate of approximately 89,000 salmon was obtained for the period August 14 through October 1. By comparison, ground surveys conducted of Toklat Springs during mid-October resulted in a count of only 16,206 chum and 276 coho salmon. The chum salmon count expanded

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year 2001. The plan will endeavor to rebuild the stronger parent years in four years (one cycle) and the weaker parent years in twelve years (three cycles) in equal increments.

to a total abundance estimate of 18,264 fish; less than 25% of the sonar salmon passage estimate. Thus, the minimum escapement goal of 33,000 chum salmon, which is predicated upon expanded survey observations made of Toklat Springs, was not achieved in 1996. An aerial survey flown of the Toklat River floodplain between Toklat Springs and the sonar counting site in late October only accounted for an additional 5,170 chum and 358 coho salmon.

Although estimates of abundance using hydroacoustic techniques have been higher than those generated from subsequent ground surveys on the Toklat River in all three years, preliminary results indicate the variation in disparity between the two estimates among years has been substantial. Thus, the hydroacoustic assessment studies remain in a developmental stage until a better understanding of inriver salmon run timing and spawner distribution (by species) is obtained for the Toklat River. Such will be essential in qualifying the relationship of sonar passage estimates of abundance with estimates obtained from subsequent spawning ground surveys.

The preliminary estimate of the total abundance of fall chum spawners in the Delta River in 1996 is 19,758, approximately 80% above the minimum escapement goal of 11,000 chum salmon. While no escapement goals exist for other fall chum salmon spawning areas in the upper Tanana River, escapement during peak spawning was estimated at 3,920 in Bluff Cabin Slough (Big Delta region). This is 79% below what was observed in 1995 (19,460) and well below the 1986-1995 ten- year average of 6,200 fish.

The cooperative ADF&G/BSFA Tanana River fall chum salmon stock assessment project resulted in a total of 4,016 chum salmon being tagged and released from August 16 through September 30. The preliminary total abundance estimate of the number of chum salmon which passed the tagging site located near the Kantishna River mouth is approximately 135,000 fish; 50% of the 1995 estimate (~268,000).

The population estimate of fall chum salmon entering the Canadian mainstem Yukon River portion of the drainage made by DFO in 1996 was 143,758 fish. Subtracting estimated Canadian commercial and non-commercial harvest (excluding Old Crow) from this population estimate results in a total escapement estimate to Yukon Territory (excluding the Porcupine River) of 122,688 spawners. An escapement level of this magnitude is the second highest on record since inception of the DFO mark and recapture program in 1982. Further, it is 86% above the targeted 1996 escapement level of 65,000 as part of a three step plan to rebuild the 1988 parent year to a minimum of 80,000 chum salmon by the year 2000.

In summary, preliminary estimates of fall chum salmon inriver commercial and subsistence harvest (~276,000) added to an estimate of drainage-wide total spawning escapement (~723,200), resulted in a 1996 total run size estimate of approximately 999,400 chum salmon (Appendix E.8).[4] This measure of run size was the largest even-year return on record and 58% above the preseason projected return of 631,000 fall chum salmon.

Coho Salmon

Coho salmon spawning escapement assessment is very limited in the Yukon River drainage due to funding limitations and often marginal survey conditions which prevail during the periods of peak spawning. While most escapement information on coho salmon is from the Tanana River drainage (Appendix E.9), cooperative efforts of USFWS and BSFA in 1996 allowed the East Fork Andreafsky summer season weir operation to be extended

[4]The sum of fall chum salmon escapements observed in the Toklat, Delta, Sheenjek, and Fishing Branch Rivers in a given year is termed the four-area escapement index. A measure of drainage-wide escapement is then taken as the four-area escapement index, doubled.

into September for a second year. This provided comprehensive escapement information concerning timing and abundance of coho salmon to a tributary in the lower Yukon River. A total of 8,037 coho salmon were passed through September 16, last day of weir operations in 1996. This compares to 10,901 coho salmon counted past the weir through September 12 in 1995.

The USFWS also operated a weir in the South Fork Koyukuk River in 1996 to monitor salmon escapements. The weir became operational on July 2. Although operations were suspended during the first half of August as a result of high water, the weir became operational again for the period August 16 through September 19. No coho salmon were passed.

Presently, only one escapement goal has been established for coho salmon in the Yukon River drainage. The Delta Clearwater River (DCR) in the Tanana River drainage has a minimum goal of 9,000 coho salmon based upon a boat survey during peak spawning. In 1996, the Sport Fisheries Division conducted a boat survey of the DCR index area on October 29 and estimated 14,075 coho salmon present, 59% above the minimum goal. An additional 3,300 coho salmon were observed in tributaries of the DCR by helicopter on October 22. The Sport Fish Division also documented 1,125 coho salmon present in the outlet stream of Clearwater Lake from an aerial survey flown on October 22.

Remaining escapement information on coho salmon in 1996 was obtained primarily by aerial surveys in portions of the Tanana River drainage, although limited ground surveys were also conducted at a few locations. A large part of this work was conducted by TCC, particularly in the Nenana River drainage. Estimated numbers of coho salmon spawners in the Nenana River drainage included 2,040 in Lost Slough, 3,668 in Seventeen Mile Slough, 2,171 in the mainstem Nenana River upstream of the Teklanika River, and approximately 5,000 in the Clear-Glacier-Wood Creek complex of the Julius Creek drainage. An additional 909 coho salmon were observed in the Teklanika River drainage. In the Toklat River drainage, only 233 coho salmon were counted in Geiger Creek while none were passed at Barton Creek weir nor any seen below the weir during the entire period August 22 through October 1.

Enforcement 1996

The primary enforcement authority for violations of Fish and Game regulations is Fish and Wildlife Protection (FWP) within the Department of Public Safety. For purposes of enforcing commercial, personal use and subsistence fishing regulations within the Yukon Area, FWP has employees permanently stationed in Bethel, McGrath, Aniak, Galena, Coldfoot, and Fairbanks. Additionally, during the fishing season, officers are stationed near the Dalton Highway bridge and at other locations along the Yukon and Tanana Rivers.

Lower Yukon Area

FWP conducted intensive patrols in the Lower Yukon Area during June 1996 utilizing two float planes and one skiff. In general, compliance with fishing regulations was good. There was one citation issued for commercial fishing during a closed period. In addition, one citation was issued for exceeding the legal drift gillnet limit of 50 fathoms and four licensing citations were issued. A total of 8 chinook and 10 summer chum salmon were confiscated because of fishing violations in 1996.

Upper Yukon Area

Aircraft and boat patrols were conducted in the Upper Yukon Area from Fairbanks and Galena during the summer and fall seasons. Warnings for improperly marked gear were given to several fishermen and one complaint of wasted salmon was investigated in Ruby. Overall few complaints were received and compliance with openings and closures was good.

Outlook For 1997

Chinook Salmon

Typically, the majority of chinook salmon returning to the Yukon River are 6-year-old fish; however, 5- and 7-year-old fish make a significant contribution to the run. Spawning ground escapements in 1991, the brood year producing 6-year-old fish returning in 1997, were judged to be average to above average in magnitude. Additionally, the return of this brood year as 5-year-old fish in 1996 appeared to be above average. The 7-year-old return is expected to be weak based upon the low contribution of age-6 fish in the 1996 run. The return of 5-year-old fish in 1997 is expected to be below average to average in abundance based on the spawning escapements observed in 1992. Overall, the 1997 chinook salmon run is anticipated to be near average in strength. The commercial harvest in Alaska is expected to total 88,000-108,000 chinook salmon (82,000-100,000 fish in the Lower Yukon Area and 6,000-8,000 fish in the Upper Yukon Area).

Summer Chum Salmon

The return of 5-year-old fish in 1997 is expected to be average based on spawning escapements observed in 1992 and the contribution of 4-year-old fish in the 1996 run. A below average to average return of age-4 summer chums is expected. Summer chum salmon spawning escapement to the Anvik River in 1993 was 517,000, slightly above the escapement goal minimum of 500,000. However, escapements to other spawning areas in 1993 appeared to be below average based upon aerial surveys of Andreafsky, Nulato, and Gisasa Rivers and tower counts on the Chena and Salcha Rivers. The Salcha River tower count was 5,563 summer chum salmon in 1993 compared to an average of 48,382 fish from 1994 through 1996. Overall, the 1997 outlook is for a below average to average summer chum salmon run. The commercial harvest is expected to be 200,000-600,000 fish given uncertainties associated with run distribution and market conditions.

Fall Chum Salmon

Estimated drainage-wide fall chum salmon escapements for the period 1974 through 1990 ranged from approximately 110,000 (1982) to 1,200,000 (1975). Escapements in these years resulted in subsequent returns which ranged in size from approximately 301,000 (1988 production) to 1,400,000 (1975 production) fish. Corresponding return per spawner rates (R/P) ranged from 1.1 to 4.5. The average return per spawner for all years combined was 2.4.

A Ricker spawner-recruit model was used to predict the returns of fall chum salmon from the 1991 to 1994 parent years which will contribute to the 1997 run. This process resulted in a projection of 750,000 fish with the following approximate age composition:

Age-3 fish	56,000 (1994 Brood Year)

Age-4 fish	423,500 (1993 Brood Year)
Age-5 fish	262,000 (1992 Brood Year)
Age-6 fish	8,500 (1991 Brood Year)

As can be seen, the suspected major contributor to the 1997 run will be from the brood year 1993. In that year a statewide chum salmon failure occurred, with the lowest fall chum salmon run on record reported for the Yukon River (~330,000 fish). Although no commercial fishing was permitted in the Alaskan portion of the drainage during the fall season in 1993 as well as severe restrictions (including partial closures) imposed on the subsistence fishery, resulting escapements were poor to most areas throughout the drainage.[5]

The strongest escapements were observed in the Tanana River with Delta River escapement being 81% above its minimum goal of 11,000 chum salmon (the only escapement goal achieved in 1993). Escapement to the Toklat River was 27,800, falling approximately 16% below the minimum goal of 33,000. Escapements were comparatively weaker in 1993 for non-Tanana River stocks. Escapement to the Sheenjek River (43,000) was 33% below the minimum goal of 64,000 chum salmon, while that in the Fishing Branch River (28,700) was 43% below the minimum goal of 50,000. Similarly, estimated escapement for upper mainstem Yukon Canadian stocks (29,700) was 42% below the 1993 targeted escapement goal of 51,000 fish. The weakness anticipated in the 1997 fall chum salmon run will probably be among the returning age-4 non-Tanana River stocks.

The current fall chum salmon management plan directs that only when the fall chum salmon run is estimated to be more than 650,000 can the department consider a directed Yukon River fall chum salmon commercial fishery. Should the 1997 fall chum salmon run materialize as projected (750,000), the run size would be sufficient to not only meet escapement, subsistence, and border passage objectives, but also provide for commercial opportunity. However, a run of this magnitude would still be below average by more than 40,000 fish for all years combined and more than 200,000 fish for odd-numbered year returns.

Coho Salmon

Although comprehensive escapement information on Yukon River coho salmon is lacking, it is known that coho salmon primarily return at age 4. Assuming average survival, results from limited escapement surveys in 1993 suggest no better than an average return of coho salmon in 1997. There is no guideline harvest range for Yukon River coho salmon and they have a later but overlapping run timing with that of fall chum salmon. Any commercial harvest of coho salmon in 1997 will be largely dependent upon the abundance of fall chum salmon and accompanying management strategies to harvest that species.

CAPE ROMANZOF DISTRICT HERRING FISHERY

Introduction

Pacific herring (*Clupea harengus pallasi*) are present in coastal waters of the Yukon Area during May and June. Spawning populations occur primarily in the Cape Romanzof area in Kokechik Bay and Scammon Bay

[5]The U.S./Canada Yukon River Panel modified the Canadian mainstem fall chum salmon rebuilding plan in November 1996, due to the very poor escapements realized in 1993. The spawning escapement goal for 1997 was lowered from 65,000 to 49,000 chum salmon in an attempt to rebuild the 1993 brood year to the desired level (>80,000) by the year 2001.

(Appendix F.1) where spawning habitat consisting of rocky beaches and rockweed (*Fucus*) is available. The arrival of herring on the spawning grounds is greatly influenced by ocean water temperature and ice conditions. Typically herring appear immediately after ice breakup. Spawning usually occurs between mid-May and mid-June.

Herring are utilized by local residents for subsistence purposes. In addition, a commercial herring sac-roe fishery has occurred in the Cape Romanzof District since 1980. The Cape Romanzof District consists of all State waters from Dall Point to 62 degrees north latitude (Appendix F.1). In 1982, the Board of Fisheries reduced the area open to commercial fishing by closing the waters outside of Kokechik Bay. Gillnets are the only legal commercial gear type. The use of mechanical shakers has been prohibited since 1988. Limited entry to the fishery began with a moratorium on new entrants in 1988. The fishery is now limited to 101 permits.

A total of $31,500 in State funds were allocated to the Division of Commercial Fisheries to manage the commercial fishery and conduct herring research studies at Cape Romanzof in May and June of 1996, not including permanent staff salaries.

Commercial Fishery 1996

Commercial harvests increased steadily after inception of the fishery in 1980, reaching a peak harvest of 1,865 tons in 1986. Since 1986, there has been a trend of decreasing harvests.

A total of 752 tons of Pacific herring were harvested by 63 fishers utilizing 63 fishing vessels (Appendix F.2 and F.4). The commercial harvest was 55% above the recent five-year-average (1991-1995) of 485 tons. A total of 750.3 tons were purchased as sac roe and 1.4 tons as bait. The average sac roe recovery was 10.6%, which is the highest on record for this district. The commercial harvest was allowed to exceed the preseason harvest projection of 683 tons after spawn deposition and age composition information indicated a larger biomass than projected.

The commercial fishery consisted of 10 periods, which were allowed between May 17 and May 25. Fishing periods ranged from 1.5 hours to 6 hours in duration for a total fishing time of 34 hours (Appendix F.2 and F.3). Poor weather conditions existed during most of the fishery with very low effort and harvest during periods one, three, five, and six because of high winds. Several fishing periods were announced hours in advance based on reports of good roe quality and the possibility that weather conditions might improve. Buyers reported roe recovery and sex ratio information obtained from deliveries during fishing periods to determine if periods could be extended. Information provided during the sixth and tenth periods was used to extend those fishing periods. Fishing gear was restricted to one 50-fathom gillnet per vessel throughout the commercial season.

The estimated exvessel value of the 1996 harvest was $638,300, which was the largest value since 1988 (Appendix F.4). Average price for herring sac roe was $800 per ton at 10% roe recovery. Three companies purchased herring. These companies were represented by one processing vessel and seven tenders during the fishery (Appendix F.5).

Fishing effort increased in 1996 compared to the low number of fishers documented from 1993 through 1995. Local Alaskan residents (defined as residents of Chevak, Hooper Bay, and Scammon Bay) accounted for 95% (60 permits) of the effort and 96% (719 tons) of the harvest.

As in other recent years, the fishery was put on a one hour advance notice prior to opening the commercial fishery. A countdown was provided fishermen prior to the opening and closing of periods on VHF radio. Generally, commercial fishing periods were scheduled prior to high tide. In coordination with the department,

commercial fishermen provided catch samples for evaluation by industry representatives prior to commercial periods (Appendix F.6). Samples were collected relatively early on the incoming tide to provide time for scheduling beach meetings and announcing periods. Typically, the samples indicated a high percentage of ripe females. Additionally, larger mesh sizes usually resulted in higher percentages of ripe females and higher roe recovery, while smaller mesh size catches generally had a lower roe recovery.

The overall exploitation rate of herring was estimated postseason to be approximately 12.5% of the available biomass (Appendix F.4). A total of 588 herring were sampled from the commercial harvest. Samples were collected from 2-5/8 in, 2-7/8 in, 3 in, 3-1/8, and 3-1/4 in mesh size gillnets. The estimated age composition of the commercial samples based on scale analysis was: age 6: 2.9%; age 7: 1.0%; age 8: 27.4%; age 9: 20.6%; age 10: 8.3%; age 11: 8.3%; age 12: 15.6%; age 13: 8.3%; and age 14 and older: 7.6% (Appendix F.10 and F.11).

One Fish and Wildlife Protection officer was present at Cape Romanzof during the ninth commercial herring fishing period. No citations were issued. Although poor weather conditions were prevalent, there was very little fishing after period closures.

Subsistence Fishery 1996

During 1996, a subsistence harvest of 3.1 tons of herring was estimated to have been taken by 29 fishing families from Hooper Bay, Chevak, and Scammon Bay (Appendix F.7). In addition, 624 pounds of spawn-on-kelp (*fucus*) were harvested for subsistence purposes by 18 families (Appendix F.8). A total of 221 herring survey questionnaires were mailed to subsistence fishing families. Additionally, postseason personal interviews were conducted in Hooper Bay and Scammon Bay in September to contact selected fishermen that did not return questionnaires. Approximately 29% of the 221 identified households were contacted. The subsistence catch figures represent only the harvest which was reported. Therefore, the reported catch is a minimum estimate since not all families were contacted and not all families which received questionnaires returned them. A majority of the fishermen that responded to questionnaires reported herring abundance appeared to be the same or more in 1996 than in 1995.

Stock Status

Due to excessive water turbidity in the Cape Romanzof area, it is usually not possible to estimate herring biomass using aerial survey techniques. Herring biomass has been estimated using a combination of information from aerial surveys, test and commercial catches, spawn deposition, and age composition. Nine aerial surveys were flown during the 1996 season from May 14 through June 4 (Appendix F.9). A total of 5.1 hours were spent surveying the district. Surveys were flown along the coast to Hooper Bay, in Scammon and Kokechik Bays, and several miles offshore of the cape in an attempt to observe schools of herring. All of the surveys were flown under poor to unacceptable survey conditions. The largest biomass of herring observed during an aerial survey was 401 tons on June 5. It was noteworthy that nearly 100 tons of herring were observed in Hooper Bay on May 26 under poor survey conditions. Herring have rarely been observed in this area because of turbid water conditions. Annually, local fishermen have reported the presence of herring in the Hooper Bay area after the end of the commercial fishery in Kokechik Bay. Based on spawn deposition study results and herring age composition, the 1996 biomass was estimated postseason to be 6,000 tons.

Test fishing with variable mesh gillnets has been conducted since 1978 to determine distribution, timing and relative abundance of spawning herring, and to collect samples for age, sex, size and relative maturity information. Test fishing was conducted by the department from May 14 through June 7, 1996. A total of 1,675

herring were caught of which 1,083 fish were sampled for biological data. Herring comprised approximately 96% of the total catch of schooling species. Other fish captured during test fishing included flounder, saffron cod, sculpin, smelt, and whitefish.

The age composition of the variable mesh test gillnet samples showed a healthy range of ages. Age 5, 6, 7, 8, 9, 10, 11 and 12 herring accounted for 11.6%, 14.9%, 3.5%, 30.9%, 15.0%, 5.4%, 4.0% and 8.0% of test fishing samples, respectively (Appendix F.12 and F.13). Age 13 and older herring comprised 4.1% of test fishing samples. Newly recruited age 3 and 4 herring represented 1.1% and 1.6% of test fishing samples. Typically, recruit herring arrive late in the spawning run and are primarily present in Scammon Bay. No test fishing was conducted in Scammon Bay in 1996 because of poor weather.

Qualitative spawn deposition surveys have been conducted annually to document herring spawn distribution. Qualitative spawn deposition surveys began on May 12. The first observations were recorded on May 13 in Kokechik Bay. The spawn deposition during this initial spawning event was light.

The department initiated a new quantitative spawn deposition study in 1992 to develop a spawn deposition index. The major difficulty encountered in attempting to estimate biomass utilizing spawn deposition data in the past was the loss of spawn due to storms and desiccation. To address this problem, artificial substrates were located in intertidal spawning areas prior to spawning. The artificial substrate consisted of small steel platforms with 6 inch by 12 inch rectangular pieces of astroturf attached to a steel plate on each platform. Spawn deposited on the astroturf was removed and weighed daily at low tide. Daily removal of spawn allowed measurements of new spawn deposition and decreased the problem of spawn loss due to wave action and desiccation observed in previous studies.

In 1996, artificial substrates were located in the same general spawning locations as in 1992 through 1995. Forty platforms were placed just north of the department's field camp on May 14. The largest spawn deposition within the study area occurred on May 14, 23, and 24 (Appendix F.14). The season total spawn deposition index of 5,599 g obtained in 1996 was the largest on record since the study was initiated in 1992 (Appendix F.15). Although there is a trend of increasing spawn deposition, it is unknown whether the study area results are indicative of the total spawning biomass within the entire district.

Outlook for 1997

The projected return for 1997, based upon limited information, is 4,500 tons. Age-9 herring are expected to dominate the biomass at 34%. Age-9 and older herring are expected to comprise approximately 70% of the returning biomass. The Bering Sea Herring management strategy is to harvest 0-20% of the estimated herring biomass. A 20% exploitation rate will be used to manage the fishery in 1997. The harvest projection is 900 tons.

Emergency order authority will be used to adjust the timing and length of fishing periods. It is very likely that gear will be restricted to one 50 fathom gillnet per vessel. A minimum level of biomass cannot be used to determine the opening of commercial fishing periods since turbid water conditions usually preclude aerial biomass assessments. The initial commercial fishing period will be established when it is determined that commercial quantities of marketable sac roe herring are present on the grounds. Test and commercial catch rates, number of fishing vessels, and spawn deposition observations will be used to determine timing and duration of commercial fishing periods. The department anticipates considerable test fishing effort utilizing volunteer commercial fishermen to assess roe quality. If sac roe quality is good, individual fishing periods may be extended. Allowing a harvest above or below the preseason projection will depend on assessment of herring abundance through aerial surveys, cumulative spawn deposition, test and commercial catch rates, and age composition data.

OTHER MARINE AND FRESHWATER FINFISH FISHERIES

Subsistence Fishery

Many subsistence fishermen operate gillnets in the main rivers and coastal marine waters to harvest marine and freshwater finfish other than salmon and herring. Beach seines are occasionally used near spawning grounds primarily capturing salmon or other schooling species of fish. Traps and fish weirs of various designs are also used, mainly in the fall and winter months, to capture whitefish (*Coregonus sp. and Prosopium sp.*), blackfish (*Dallia pectoralis*), and burbot (*Lota lota*). Sheefish (*Stenodous leucicthys*), northern pike (*Esox lucius*), char (*Salvelinus sp.*), and "tomcod" (saffron cod) (*Eleginus gracilis*) are frequently taken through the ice by hand lines. Dip nets are used in late May to early June to take smelt in the delta area and in late October to early November to take Arctic lamprey (*Lamperta japonica*) in the main Yukon River downstream of Grayling.

Subsistence fisheries which target on non-salmon species such as pike, sheefish, and whitefish are inadequately documented and their overall significance is not well known. A comprehensive subsistence use survey was conducted in the lower Yukon River in 1978-1979 (Crawford 1979). Several studies have been conducted to investigate sheefish migrations and to locate spawning areas in the Koyukuk River drainage (Alt 1968, 1969, 1970, 1974) and in the main Yukon River between Stevens Village and Fort Yukon (Alt 1986). The sheefish migration occurs just prior to and during the beginning of the upstream migration of chinook salmon and a limited number of sheefish are harvested during late May and early June in the Lower Yukon River as sheefish migrate upriver. Fish wheels take relatively small numbers of whitefish and sheefish in the upper Yukon and Tanana Rivers during the commercial salmon fishery. Since 1993, subsistence salmon surveys included the collection of freshwater finfish harvest data. Estimated and reported subsistence catches of freshwater finfish from subsistence surveys in 1996 are presented in Appendix G.1 and subsistence catches of freshwater finfish taken under authority of a permit in the Upper Yukon Area in 1996 are presented in Appendix G.2.

Commercial Fishery

Regulations adopted by the Alaska Board of Fisheries allow the Department of Fish and Game to issue permits for the commercial harvest of freshwater species of fish such as whitefish, sheefish, char, northern pike, blackfish and Arctic lamprey. Commercial fisheries for species other than salmon have been allowed in widely scattered locations throughout the Yukon and Tanana River drainages and in the Colville River on the North Slope. The Colville River is located in the Northern Area. Most of these fisheries are limited, experimental operations, and occur only sporadically.

Permits for the taking of non-salmon species have been issued for various locations in the Lower Yukon Area. Reported harvests for those fisheries are presented in Appendix G.3. No permits were issued in 1996. Set gillnets are primarily used for taking whitefish and sheefish in the Lower Yukon Area. Typically, the catch is marketed in local village stores or in Bethel. A commercial fishery for whitefish has existed in the Colville River delta (located approximately 60 miles west of Prudhoe Bay) since 1964. Fishing generally takes place during late June and July for broad and humpback whitefish; and October through early December for arctic and least cisco (Appendix G.4). Set gillnets are used as capture gear, and fishing during fall months occurs under the ice. Not all fish reported on permits for this area are sold. In the Upper Yukon Area, commercial freshwater fisheries targeting primarily whitefish have been permitted in recent years (Appendix G.5). Permit authorization is not required for the sale of these species when taken incidentally during commercial salmon fishing (Appendix G.6-G.8).

LITERATURE CITED

ADF&G. 1983. Annual management report, 1983, Yukon Area. Alaska Department of Fish and Game, Division of Commercial Fisheries, Anchorage.

ADF&G. 1985. Annual management report, 1985, Yukon Area. Alaska Department of Fish and Game, Division of Commercial Fisheries, Anchorage.

ADF&G. 1986. Annual management report, 1986, Yukon Area. Alaska Department of Fish and Game, Division of Commercial Fisheries, Anchorage.

ADF&G. 1992. Annual management report, Yukon Area, 1991. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report No. 3A92-26, Anchorage.

Alt, K. T. 1968. Sheefish and pike studies in Alaska. Alaska Department of Fish and Game, Federal Aid in Fish Restoration, Volume 9, Juneau.

Alt, K. T. 1969. Sheefish and whitefish life history studies in Alaska. Alaska Department of Fish and Game, Federal Aid in Fish Restoration, Volume 10, Juneau.

Alt, K. T. 1970. Sheefish and whitefish life history studies in Alaska. Alaska Department of Fish and Game, Federal Aid in Fish Restoration, Volume 11, Juneau.

Alt, K. T. 1974. Sheefish and whitefish life history studies in Alaska. Alaska Department of Fish and Game, Federal Aid in Fish Restoration, Volume 15, Juneau.

Alt, K. T. 1986. Whitefish/Sheefish studies. Alaska Department of Fish and Game, Federal Aid in Fish Restoration, Volume 27, Juneau.

Borba, B. M. and H. H. Hamner. 1997. Subsistence and personal use salmon harvest estimates, Yukon Area, 1995. Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Regional Information Report No. 3A97-28, Anchorage.

Bromaghin, J. F. and H. H. Hamner. 1993. Estimates of subsistence salmon harvests within the Yukon River drainage in Alaska, 1991. Alaska Department of Fish and Game, Division of Commercial Fisheries, Technical Fishery Report No 93-06, Juneau.

Crawford, D. 1979. Lower Yukon River sheefish study October 1977-June 1978. Alaska Department of Fish and Game, Division of Commercial Fisheries, AYK-Region Sheefish Report No. 9, Anchorage.

Sandone, G. J. 1991. An improved procedure to estimate summer chum salmon harvest in District 4 of the Yukon River, Alaska, as applied to the 1989 fishery. Alaska Department of Fish and Game, Division of Commercial Fisheries, Fishery Research Bulletin No. 91-02, Anchorage.

Schneiderhan, D. J. *In press*. Origins of chinook salmon in the Yukon River fisheries, 1996. Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Regional Information Report, Anchorage.

Tobin, J. H. and K. C. Harper. 1995. Abundance and run timing of adult salmon in the East Fork Andreafsky River, Yukon Delta National Wildlife Refuge, Alaska, 1994. U. S. Fish and Wildlife Service, Alaska Fisheries Progress Report No. 95-5, Kenai.

Walker, R. J. and three co-authors. 1989. Subsistence harvest of Pacific salmon in the Yukon River drainage, Alaska 1977-88. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report No. 3A89-21, Anchorage.

TABLES AND FIGURES

Table 1. Guideline harvest ranges and mid-points for commercial harvest of Yukon River chinook, summer chum and fall chum salmon in Alaska, 1996.

Chinook Salmon

District or Subdistrict	Guideline Harvest Range [a]					
	Lower		Mid-Point		Upper	
	Numbers	Percent	Numbers	Percent	Numbers	Percent
1 and 2	60,000	89.1	90,000	91.6	120,000	92.9
3	1,800	2.7	2,000	2.0	2,200	1.7
4	2,250	3.3	2,550	2.6	2,850	2.2
5A, B, C	2,400	3.6	2,600	2.6	2,800	2.2
5D	300	0.4	400	0.4	500	0.4
6	600	0.9	700	0.7	800	0.6
Total	67,350	100.0	98,250	100.0	129,150	100.0

Summer Chum Salmon

District or Subdistrict	Guideline Harvest Range [b]					
	Lower		Mid-Point		Upper	
	Numbers	Percent	Numbers	Percent	Numbers	Percent
1 and 2	251,000	62.8	503,000	62.9	755,000	62.9
3	6,000	1.5	12,500	1.6	19,000	1.6
4A [c]	113,000	28.3	225,500	28.2	338,000	28.2
4B, C	16,000	4.0	31,500	3.9	47,000	3.9
5	1,000	0.3	2,000	0.3	3,000	0.3
6	13,000	3.3	25,500	3.2	38,000	3.2
Total	400,000	100.0	800,000	100.0	1,200,000	100.0

Anvik River Management Area Roe cap of 100,000 pounds [d]

Fall Chum Salmon

District or Subdistrict	Guideline Harvest Range [e]					
	Lower		Mid-Point		Upper	
	Numbers	Percent	Numbers	Percent	Numbers	Percent
1, 2, and 3	60,000	82.5	140,000	71.2	220,000	68.6
4B, C	5,000	6.9	22,500	11.4	40,000	12.5
5A, B, C	4,000	5.5	20,000	10.2	36,000	11.2
5D	1,000	1.4	2,500	1.3	4,000	1.2
6	2,750	3.8	11,625	5.9	20,500	6.4
Total	72,750	100.0	196,625	100.0	320,500	100.0

[a] The chinook salmon guideline harvest ranges have been in effect since 1981.

[b] Summer chum salmon guideline harvest ranges were established in February 1990 based on the average harvest shares from 1975-1989.

[c] Or the equivalent roe poundage of 61,000 to 183,000 pounds or some combination of fish and pounds of roe.

[d] The current Anvik River Management Area roe cap was established in March 1996.

[e] The current fall chum salmon guideline harvest ranges were established in 1990.

Table 2. Salmon processors, buyers, catcher-sellers, and associated data, Yukon Area, 1996.

Commercial operation (Processing location/ buying station)	Product	District
Yukon Delta Fish Marketing CO-OP, Inc. P.O. Box 169 Emmonak, AK 99581 (Emmonak)	Frozen Salmon Fresh Salmon Chinook Chum Salmon Roe	1 and 2
Bering Sea Fisheries, Inc. 4413 83rd Ave. SE Everett, WA 98205 (Lamont Slough)	Frozen Salmon Chinook Chum Salmon Roe	1 and 2
Boreal Fisheries P.O. Box 561 Graham, WA 98338 (Old Andreafsky)	Fresh Salmon Chinook Chum Salmon Roe	1 and 2
Great Pacific Seafoods, Inc. Box 81165 Seattle, WA 98108	Fresh Salmon Chinook Chum Salmon Roe	1 and 2
Maserculiq Fish Processors P.O. Box 118535 Marshall, AK 99585 (Marshall)	Fresh Salmon Chinook Chum Salmon Roe	2
Judy M. Price (catcher/seller) Box 319 Talkeetna, AK 99676 (Emmonak)	Fresh Salmon Chinook	2
Trans-Ocean Seafood Sales PO Box 64 Aniak, AK. 99557 (Aniak, Anvik, Grayling)	Frozen Salmon Chinook Chum Salmon Roe	3 and 4
Great Northern Seafoods, Inc. Box 240365 Anchorage, AK 99524 (Galena)	Frozen Salmon Chinook Chum Salmon Roe	4

Table 2. Salmon processors, buyers, catcher-sellers, and associated data, Yukon Area, 1996.

Commercial operation (Processing location/ buying station)	Product	District
Sea Crest Inc. 6240 Rockhill Circle Anchorage, AK 99516 (Anvik, Galena, Ruby)	Frozen Salmon Fresh Salmon Chinook, Chum, Coho Salmon Roe	3 and 4
Dainty Island Fisheries PO Box 49 Galena, AK 99741 (Galena)	Smoked Salmon Chinook Chum	4
Interior Alaska Fish Processors, Inc. 2400 Davis Road Fairbanks, AK 99701 (Fairbanks, Kaitag, Nenana, North Pole)	Frozen Salmon Chinook, Chum, Coho Salmon Roe	4, 5, and 6
Yutana Fisheries PO Box 83809 Fairbanks, AK 99701 or PO Box 38 Manley, AK 99756 (Kaltag, Manley, Nenana)	Frozen Salmon Fresh Salmon Chinook, Chum, Coho Salmon Roe	4, 5, and 6
Arctic Circle Seafood's PO Box 18 Circle, AK 99733 (Circle)	Frozen Salmon Chinook, Chum Salmon Roe	5
Steven's Fisheries PO Box 38 Nenana, AK 99760 (Nenana)	Frozen Salmon Fresh Salmon Chinook, Chum, Coho Salmon Roe	6
Charlie Campbell (catcher/seller) MHF Enterprise PO Box 111 Tanana, AK 99777 (Tanana)	Fresh Salmon Chinook, Chum	5
Patrick Moore (catcher/seller) PO Box 61 Tanana, AK 99777 (Tanana)	Fresh Salmon Chinook, Chum	5

Table 2. Salmon processors, buyers, catcher-sellers, and associated data, Yukon Area, 1996.

Commercial operation (Processing location/ buying station)	Product	District
Merrill J. Hakala (catcher/seller) 140 Front St. Fairbanks, AK 99701 (Circle, Fairbanks)	Fresh Salmon Chinook, Chum	5
Alfred Wright (catcher/seller) PO Box 60531 Fairbanks, AK 99706 (Fairbanks)	Fresh Salmon Chinook, Chum	5
Linda Johnson (catcher/seller) Box 57 Manley, AK 99756 (Fairbanks)	Fresh Salmon Chinook, Chum	5
Renee and Peter Merry (catcher/seller) 1293 Shypoke Drive Fairbanks, AK 99709 (Fairbanks)	Fresh Salmon Chinook, Chum	5
Steve O'Brien (catcher/seller) PO Box 42 Manley Hot Springs, AK 99756 (Fairbanks)	Fresh Salmon Chinook	5
Stan Zuray (catcher/seller) Box 172 Tanana, AK 99777 (Fairbanks)	Fresh Salmon Chinook, Chum	5
Gary Hinzman (catcher/seller) 1366 Opportunity Way Fairbanks, AK 99709 (Fairbanks)	Fresh Salmon Chinook, Chum	6
John Childs (catcher/seller) 2091 Yellow Snow Rd. Fairbanks, AK 99709 (Fairbanks)	Fresh Salmon Chinook, Chum	6

Table 2. Salmon processors, buyers, catcher-sellers, and associated data, Yukon Area, 1996.

Commercial operation (Processing location/ buying station)	Product	District
Andy Ludecker (catcher/seller) 2875 Ludecker Road Fairbanks, AK 99709 (Fairbanks)	Fresh Salmon Chinook, Chum	6

Table 3. Commercial Fisheries Entry Commission salmon gear permits issued by residence, Yukon Area, 1996. [a]

District	Residence	GillNet Permits (S04Y)
1, 2, and 3	Emmonak	103
	Mountain Village	91
	Alakanuk	74
	Kotlik	72
	St. Marys	68
	Pilot Station	54
	Scammon Bay	42
	Marshall	32
	Sheldon Point	25
	Anchorage	24
	Fairbanks	16
	Bethel	13
	Russian Mission	12
	Stebbins	12
	Fortuna Ledge	7
	Holy Cross	7
	Unalakleet	5
	Talkeetna	4
	Wasilla	4
	Chevak	2
	Hooper Bay	2
	Manley Hot Springs	2
	Nome	2
	Palmer	2
	Pitkas Point	2
	Sand Point	2
	Shaktoolik	2
	Aleknagik	1
	Aniak	1
	Big Lake	1
	Cooper Landing	1
	Dutch Harbor	1
	Eek	1
	Elim	1
	Iliamna	1
	Kalskag	1
	Ketchikan	1
	Koliganek	1
	Lower Kalskag	1
	Newtok	1
	Saint Paul Island	1
	Sitka	1
	Sutton	1
	Whittier	1
	Willow	1
	Cameron Mills, NY	1
	Everett, WA	1
	Hampstead, NC	1
	Juliaetta, ID	1
	Renton, WA	1
	Rock Hill, SC	1
	Seattle, WA	1
	Twisp, WA	1
Total Lower Yukon		707

-Continued-

Table 3. (p. 2 of 2).

District	Residence	GillNet Permits (S04P)	Fish Wheel Permits (S08P)	Total
4, 5, and 6	Fairbanks	21	22	43
	Galena	4	26	30
	Nenana	6	21	27
	Tanana	3	16	19
	Kaltag	3	15	18
	Nulato	0	15	15
	Anvik	5	9	14
	Ruby	3	9	12
	Grayling	5	3	8
	Manley Hot Springs	2	4	6
	Rampart	4	2	6
	Anchorage	4	1	5
	Stevens Village	1	3	4
	Anchor Pt.	0	2	2
	Koyukuk	0	2	2
	Soldotna	1	0	1
	Wasilla	0	2	2
	Aniak	1	0	1
	Barrow	0	1	1
	Cantwell	1	0	1
	Circle City	0	1	1
	Dot Lake	0	1	1
	Eagle River	0	1	1
	Ft. Yukon	0	1	1
	Gakona	1	0	1
	Holy Cross	1	0	1
	Huslia	0	1	1
	Kenai	0	1	1
	Kodiak	1	0	1
	Minto	0	1	1
	Nome	1	0	1
	North Pole	0	1	1
	Palmer	1	0	1
	Russian Mission	0	1	1
	Salcha	1	0	1
	Beverly Hills, CA	1	0	1
	Comstock, WI	0	1	1
	New York, NY	0	1	1
	Portland, OR	0	1	1
	Three Forks, MT	1	0	1
Total Upper Yukon		72	165	237
Grand Total Yukon Area		779	165	944

[a] Counts are for initial issues only and do not include transfers. Counts include interim use permits.

Table 4. Commercial salmon and salmon roe sales by statistical area, Yukon Area, 1996.[a, b]

Statistical Area	Chinook			Summer Chum			Fall Chum			Coho			Total Salmon		
	Numbers	Roe	Estimated	Numbers	Roe	Estimated	Numbers	Roe	Estimated	Numbers	Roe	Estimated	Numbers	Roe	Estimated
334-11	6,079	0	6,079	19,432	0	19,432	0	0	0	0	0	0	25,511	0	25,511
12	6,858	0	6,858	17,769	0	17,769	2,686	0	2,686	1,555	0	1,555	28,868	0	28,868
13	3,791	0	3,791	6,837	0	6,837	2,333	0	2,333	1,564	0	1,564	14,525	0	14,525
14	3,297	0	3,297	5,611	0	5,611	1,243	0	1,243	854	0	854	11,005	0	11,005
15	8,850	0	8,850	13,111	0	13,111	4,561	0	4,561	3,995	0	3,995	30,517	0	30,517
16	4,478	0	4,478	2,831	0	2,831	9,976	0	9,976	9,634	0	9,634	26,919	0	26,919
17	16,789	0	16,789	17,864	0	17,864	8,504	0	8,504	8,068	0	8,068	51,225	0	51,225
18	6,500	0	6,500	9,051	0	9,051	4,326	0	4,326	2,035	0	2,035	21,912	0	21,912
Subtotal District 1	56,642	0	56,642	92,506	0	92,506	33,629	0	33,629	27,705	0	27,705	210,482	0	210,482
334-21	8,265	0	8,265	9,177	0	9,177	1,960	0	1,960	761	0	761	20,163	0	20,163
22	9,134	0	9,134	13,056	0	13,056	14,349	0	14,349	12,155	0	12,155	48,694	0	48,694
23	2,749	0	2,749	4,965	0	4,965	4,184	0	4,184	2,755	0	2,755	14,653	0	14,653
24	3,626	0	3,626	2,479	0	2,479	7,634	0	7,634	4,409	0	4,409	18,148	0	18,148
25	6,435	0	6,435	1,050	0	1,050	1,524	0	1,524	894	0	894	9,903	0	9,903
Subtotal District 2	30,209	0	30,209	30,727	0	30,727	29,651	0	29,651	20,974	0	20,974	111,561	0	111,561
334-31	0	0	0	0	162	465	0	0	0	0	0	0	0	162	465
32	0	0	0	0	773	1,069	0	0	0	0	0	0	0	773	1,069
Subtotal District 3	0	0	0	0	935	1,534	0	0	0	0	0	0	0	935	1,534
Total Lower Yukon	86,851	0	86,851	123,233	935	124,767	63,280	0	63,280	48,679	0	48,679	322,043	935	323,577

-Continued-

Table 4. (p. 2 of 2)

Statistical Area	Chinook			Summer Chum			Fall Chum			Coho			Total Salmon		
	Numbers	Roe	Estimated	Numbers	Roe	Estimated	Numbers	Roe	Estimated	Numbers	Roe	Estimated	Numbers	Roe	Estimated
334-42	11	202	103 [b]	0	36,927	67,012	2,918	0	2,918	161	0	161	3,090	37,129	70,194
43	34	0	34	0	895	1,627	0	0	0	0	0	0	34	895	1,661
44	0	0	0	0	31,186	60,802	0	0	0	0	0	0	0	31,186	60,802
45	0	0	0	0	40,692	76,268	0	0	0	0	0	0	0	40,692	76,268
46	0	0	0	0	109,172	219,868	0	0	0	0	0	0	0	109,172	219,868
47	0	0	0	0	76,318	84,663	0	0	0	0	0	0	0	76,318	84,663
Subtotal District 4	45	202	137	0	295,190	510,240	2,918	0	2,918	161	0	161	3,124	295,392	513,456
334-51	0	0	0	0	0	0	0	181	208	0	0	0	0	181	208
52	898	455	1,126	0	0	0	5,898	8,317	15,670	0	0	0	6,796	8,772	16,796
53	1,151	63	1,183	0	188	209	1,583	0	1,583	0	0	0	2,734	251	2,975
54	58	0	58	0	114	127	890	0	890	0	0	0	948	114	1,075
55	390	0	390	0	0	0	3,507	0	3,507	0	0	0	3,897	0	3,897
Subtotal Distnct 5	2,497	518	2,757	0	302	336	11,878	8,498	21,858	0	0	0	14,375	9,318	24,951
334-61	0	0	0	3,194	0	3,194	663	236	934	182	0	182	4,039	236	4,310
62	110	645	255	12,632	13,139	30,206	8,491	4,906	14,332	3,403	4,571	6,557	24,636	23,261	51,095
63	168	105	192	6,534	5,193	13,490	1,112	1,031	2,308	218	258	403	8,032	6,587	16,201
Subtotal District 6	278	750	447	22,360	18,332	46,890	10,266	6,173	17,574	3,803	4,829	7,142	36,707	30,084	72,053
Total Upper Yukon	2,820	1,470	3,341	22,360	313,824	557,466	25,062	14,671	42,350	3,964	4,829	7,303	54,206	334,794	610,460
Grand Total Yukon Area	89,671	1,470	90,192	145,593	314,759	682,233	88,342	14,671	105,630	52,643	4,829	55,982	376,249	335,729	934,037

[a] Sales reported in numbers of fish sold in the round and pounds of unprocessed roe. Does not include ADF&G test fishery sales.

[b] Estimated harvest includes the estimated number of females to produce the roe sold, except for in District 3 and 4 where the estimated harvest also includes male summer chum salmon.

[c] In addition, one pound of pink salmon roe was sold from a reported harvest of 100 pink salmon in statistical area 334-32.

Table 5. Commercial salmon harvest by fishing period, set and drift gillnets combined, District 1, Lower Yukon Area, 1996. [a]

Period	Period Dates	Hours Fished Set/Drift	No. of Fishers	Period Catch			Cumulative Catch		
				Chinook	Coho	Chum	Chinook	Coho	Chum
1	6/10-6/11	12	378	13,989	0	9,240	13,989	0	9,240
2	6/13-6/14	12	384	6,810	0	15,088	20,799	0	24,328
3	6/17-6/18	12	392	6,737	0	13,264	27,536	0	37,592
4	6/20-6/21	12	415	11,348	0	19,772	38,884	0	57,364
5	6/24-6/25	12	424	10,867	0	18,247	49,751	0	75,611
6	6/27-6/28	12	408	6,886	0	16,895	56,637	0	92,506
Unrestricted Mesh Size Subtotal		60	448	56,637	0	92,506			
Restricted Mesh Size Subtotal [b]		0	0	0	0	0			
Summer Season Total		*60*	*448*	*56,637*	*0*	*92,506*			
7	8/06-8/06	9/6	58	0	979	1,854	0	979	1,854
8	8/09-8/09	9/6	81	0	2,011	4,317	0	2,990	6,171
9	8/12-8/12	9/6	94	1	5,762	6,190	1	8,752	12,361
10	8/15-8/15	9/6	124	1	13,229	15,132	2	21,981	27,493
11	8/19-8/19	9/6	70	2	1,291	1,333	4	23,272	28,826
12	8/22-8/22	9/9	43	1	2,245	1,280	5	25,517	30,106
13	8/26-8/26	4/4	67	0	2,188	3,523	5	27,705	33,629
Fall Season Total		*58/43*	*158*	*5*	*27,705*	*33,629*			
Grand Total		**118/103**	**455**	**56,642**	**27,705**	**126,135**			

[a] Harvest reported in numbers of fish sold in the round. Does not include ADF&G test fishery sales.

[b] Six inch maximum mesh size restriction in effect.

[c] During the fall chum season (8/06-8/26), the district was divided into a Setnet Only Area (4 to 9 hour periods) and a Gillnet Area (4 to 9 hour periods)

Table 6. Commercial salmon harvest by fishing period, set and drift gillnets combined, District 2, Lower Yukon Area, 1996. [a]

Period	Period Dates	Hours Fished	No. of Fishers	Period Catch			Cumulative Catch		
				Chinook	Coho	Chum	Chinook	Coho	Chum
1	6/09-6/09	6	151	7,451	0	6,381	7,451	0	6,381
2	6/12-6/13	12	173	10,042	0	4,749	17,493	0	11,130
3	6/17-6/17	12	170	4,946	0	8,674	22,439	0	19,804
4	6/19-6/20	12	165	3,296	0	4,002	25,735	0	23,806
5	6/23-6/24	9	171	3,296	0	4,652	29,031	0	28,458
6	7/01-7/01	6	133	1,177	0	2,269	30,208	0	30,727
Unrestricted Mesh Size Subtotal		57	189	30,208	0	30,727			
Restricted Mesh Size Subtotal [b]		0	0	0	0	0			
Summer Season Total		*57*	*189*	*30,208*	*0*	*30,727*			
7	8/08-8/08	6	54	0	1,794	2,575	0	1,794	2,575
8	8/12-8/12	6	62	0	2,025	4,871	0	3,819	7,446
9	8/15-8/15	9	69	1	4,763	6,954	1	8,582	14,400
10	8/19-8/19	9	58	0	5,688	7,587	1	14,270	21,987
11	8/22-8/22	9	42	0	2,715	1,417	1	16,985	23,404
12	8/26-8/26	6	44	0	3,989	6,247	1	20,974	29,651
Fall Season Total		*45*	*109*	*1*	*20,974*	*29,651*			
Grand Total		**102**	**217**	**30,209**	**20,974**	**60,378**			

[a] Harvest reported in numbers of fish sold in the round. Does not include ADF&G test fishery sales.

[b] Six inch maximum mesh size restriction in effect.

Table 7. Commercial salmon harvest by fishing period, set and drift gillnets combined, District 3, Lower Yukon Area, 1996. a

Period	Period Dates	Hours Fished	No. of Fishermen	Period Catch							Cumulative Catch			
						Chum			Pink					
				Chinook	Coho	Number	Pounds of Roe	Estimated Harvest	Pounds of Roe	Estimated Harvest	Chinook	Coho	Chum	Pink
Unrestricted Mesh Size Subtotal		0	0	0	0	0	0	0	0	0				
1	7/05-7/05	6	8	0	0	0	606	1,107	0	0	0	0	1,107	0
2	7/12-7/13	12	5	0	0	0	329	427	1	100	0	0	1,534	100
Restricted Mesh Size Subtotal [b]		18	9	0	0	0	935	1,534	1	100				
Summer Season Total		*18*	*9*	*0*	*0*	*0*	*935*	*1,534*	*1*	*100*				
Fall Season Total		*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*				
Grand Total		**18**	**9**	**0**	**0**	**0**	**935**	**1,534**	**1**	**100**				

[a] Harvest reported as number of fish sold in the round and pounds of roe sold. Estimated harvest is the estimated number of males and females harvested to produce roe sold.

[b] Six inch maximum mesh size restriction in effect.

Table 8. Commercial salmon and salmon roe sales and effort by fishing period, set gillnets and fish wheels combined, District 4, Upper Yukon Area, 1996.

Subdistrict 4-A

Period	Period Dates	Hours Opened	No. of Fishermen	Chinook Salmon Number [a]	Chinook Salmon Pounds of Roe	Chinook Expansion Roe Weight [b]	Chinook Expansion Estimated Harvest [c]	Summer Chum Salmon Number [a]	Summer Chum Salmon Pounds of Roe	Summer Chum Expansion Percent Females	Summer Chum Expansion Roe Weight [b]	Summer Chum Expansion Estimated Harvest [d]
1	6/23-6/24	12	40	0	0	2.00	0	0	14,563	0.51	0.86	32,886
2	6/25-6/26	12	44	0	0	2.00	0	0	23,742	0.52	0.90	49,849
3	6/27-6/28	12	48	0	0	2.00	0	0	22,460	0.53	0.88	49,388
4	6/30-7/01	18	51	0	0	2.00	0	0	39,776	0.61	0.89	77,403
5	7/04-7/05	18	48	0	0	2.00	0	0	35,793	0.58	0.90	71,751
6	7/07-7/08	12	44	0	0	2.00	0	0	21,069	0.59	0.92	38,734
7	7/11-7/12	18	44	0	0	2.00	0	0	18,856	0.72	0.92	27,205
8	7/14-7/15	18	41	0	0	2.00	0	0	6,789	0.72	0.97	9,722
Subtotal		120	62	0	0	2.00	0	0	181,050			356,938
Guideline Harvest Range:												113,000 to 338,000 Summer Chum Salmon

Anvik River Management Area

Period	Period Dates	Hours Opened	No. of Fishermen	Summer Chum Salmon Number [a]	Summer Chum Salmon Pounds of Roe	Summer Chum Expansion Percent Females	Summer Chum Expansion Roe Weight [b]	Summer Chum Expansion Estimated Harvest [c]
1	6/23-6/24	12	9	0	4,302	100.0	0.86	5,003
2	6/25-6/26	12	10	0	6,775	100.0	0.90	7,528
3	6/27-6/28	12	6	0	5,013	100.0	0.87	5,762
4	6/30-7/01	12	10	0	9,540	100.0	0.89	10,719
5	7/02-7/03	12	20	0	17,121	100.0	0.94	18,214
6	7/04-7/05	12	16	0	18,231	100.0	0.89	20,484
7	7/07-7/08	12	14	0	8,108	100.0	0.93	8,718
8	7/09-7/10	12	14	0	4,899	100.0	0.86	5,696
9	7/11-7/12	12	3	0	1,767	100.0	0.93	1,900
10	7/14-7/15	12	3	0	562	100.0	0.88	639
Subtotal		120	23	0	76,318			84,663

-Continued-

Table 8. (p. 2 of 3)

Subdistricts 4-B and 4-C Summer Season

Period	Period Dates	Hours Opened	No. of Fishermen	Chinook Salmon		Chinook Expansion		Summer Chum Salmon		Chum Salmon Expansion		
				Number [a]	Pounds of Roe	Roe Weight [b]	Estimated Harvest [c]	Number [a]	Pounds of Roe	Percent Females	Roe Weight [b]	Estimated Harvest [d]
1	6/23-6/25	48	16	0	31	2.19	14	0	12,033	0.54	0.95	23,456
2	6/26-6/28	48	18	0	65	2.19	30	0	12,116	0.61	0.97	20,477
3	7/03-7/05	48	19	45	68	2.19	76	0	6,557	0.58	0.90	12,561
4	7/10-7/12	48	16	0	38	2.19	17	0	7,116	0.63	0.93	12,145
Subtotal		192	22	45	202		137	0	37,822			68,639
Guideline Harvest Range:						2,250 to 2,850 Chinook Salmon				16,000 to 47,000 Summer Chum Salmon		

-Continued-

Subdistricts 4-B and 4-C Fall Season

Period	Period Dates	Hours Opened	No. of Fishermen	Coho Salmon Number [a]	Coho Salmon Pounds of Roe	Coho Expansion Roe Weight [b]	Coho Expansion Estimated Harvest [c]	Fall Chum Salmon Number [a]	Fall Chum Salmon Pounds of Roe	Fall Chum Salmon Expansion Percent Females	Fall Chum Salmon Expansion Roe Weight [b]	Fall Chum Salmon Expansion Estimated Harvest [c]
5	8/14-8/16	48	1	20	0	0.80	20	697	0	-	0.70	697
6	8/18-8/20	48	1	30	0	0.80	30	720	0	-	0.70	720
7	8/21-8/23	48	1	51	0	0.80	51	551	0	-	0.70	551
8	8/25-8/27	48	1	60	0	0.80	60	950	0	-	0.70	950
9	8/28-8/30	48	0	0	0	0.80	0	0	0	-	0.70	0
Subtotal		240	1	161	0		161	2,918	0			2,918
Guideline Harvest Range:										5,000 to 40,000 Fall Chum Salmon		

[a] Number of salmon sold in the round.
[b] Estimated average roe weight in pounds per female used in expansion.
[c] Estimated harvest is the number of fish sold in the round plus estimated females harvested to produce roe sold.
[d] Estimated harvest is the estimated number of males and females harvested to produce roe sold. Numbers sold in the round are assumed to be primarily males and are not added to estimated harvest to avoid double counting.

Table 9. Commercial salmon and salmon roe sales and effort by fishing period, set gillnets and fish wheels combined, District 5, Upper Yukon Area, 1996.

Subdistricts 5-A, B, C Summer Season

Period	Date	Hours Opened	Number of Fishermen	Chinook Salmon		Chinook Expansion		Summer Chum Salmon		Chum Expansion	
				Number	Pounds of Roe	Roe Weight [a]	Estimated Harvest [b]	Number	Pounds of Roe	Roe Weight [a]	Estimated Harvest [b]
1	6/26-6/28	36	16	1,614	329	2.00	1,779	0	188	0.90	209
2	6/30-7/01	24	18	435	189	2.00	530	0	0	0.90	0
Subtotal		60	21	2,049	518		2,309	0	188		209
Guideline Harvest Range:						2,400 to 2,800 Chinook			1,000 to 3,000 Summer Chum Salmon		

Subdistrict 5-A, B, C Fall Season

Period	Date	Hours Opened	Number of Fishermen	Coho	Fall Chum Salmon		Chum Expansion	
					Number	Pounds of Roe	Roe Weight [a]	Estimated Harvest [b]
3	8/16-8/17	24	13	0	5,144	303	0.90	5,481
4	8/23-8/24	24	9	0	2,337	1,206	0.85	3,756
5	9/03-9/04	24	7	0	0	787	0.89	884
6	9/06-9/08	48	7	0	0	1,275	0.86	1,483
7	9/10-9/12	48	5	0	0	1,641	0.83	1,977
8	9/13-9/15	48	7	0	0	1,822	0.87	2,094
9	9/17-9/19	48	5	0	0	1,464	0.82	1,786
10	9/20-9/22	48	0	0	0	0	0.00	0
11	9/24-9/26	48	0	0	0	0	0.00	0
12	9/27-9/29	48	0	0	0	0	0.00	0
Subtotal		408	12	0	7,481	8,498		17,461
Guideline Harvest Range:					1,000 to 4,000 Fall Chum Salmon			

-Continued-

Table 9. (p.2 of 2)

Subdistrict 5-D Summer Season

Period	Date	Hours Opened	Number of Fishermen	Chinook	Summer Chum Salmon Number	Summer Chum Salmon Pounds of Roe	Chum Expansion Roe Weight [a]	Chum Expansion Estimated Harvest [b]
1	7/02-7/04	36	2	141	0	0	0.90	0
2	7/12-7/14	36	2	110	0	0	0.90	0
3	7/16-7/18	36	2	197	0	114	0.90	127
Subtotal		108	2	448	0	114		127

Guideline Harvest Range: 300 to 500 Chinook Salmon

Subdistrict 5-D Fall Season

Period	Date	Hours Opened	Number of Fishermen	Coho	Fall Chum Salmon Number	Fall Chum Salmon Pounds of Roe	Chum Expansion Roe Weight [a]	Chum Expansion Estimated Harvest [b]
4	8/16-8/17	24	1	0	890	0	0.90	890
5	8/23-8/24	24	1	0	290	0	0.90	290
6	9/05-9/07	48	1	0	1,050	0	0.90	1,050
7	9/10-9/12	48	1	0	870	0	0.90	870
8	9/16-9/18	48	1	0	834	0	0.90	834
9	9/20-9/22	48	1	0	463	0	0.90	463
Subtotal		240	2	0	4,397	0		4,397

Guideline Harvest Range: 1,000 to 4,000 Fall Chum Salmon

[a] Estimated average roe weight in pounds per female used in expansion.
[b] Estimated harvest is the number of fish sold in the round plus estimated number of females harvested to produce roe sold.

Table 10. Commercial salmon and salmon roe sales and effort by fishing period, set gillnets and fish wheels combined, District 6, Upper Yukon Area, 1996.

District 6 Summer Season

Period	Date	Hours Opened	Number of Fishermen	Chinook Salmon Number	Chinook Salmon Pounds of Roe	Chinook Expansion Roe Weight [a]	Chinook Expansion Estimated Harvest [b]	Summer Chum Salmon Number	Summer Chum Salmon Pounds of Roe	Summer Chum Expansion Roe Weight [a]	Summer Chum Expansion Estimated Harvest [b]
1	7/12-7/14	42	11	153	224	4.30	205	2,949	1,896	0.75	5,477
2	7/15-7/17	42	13	65	234	4.90	113	3,131	2,369	0.77	6,208
3	7/19-7/21	42	14	47	77	4.30	65	9,112	5,505	0.75	16,452
4	7/22-7/24	42	13	6	88	4.30	26	2,888	3,311	0.73	7,423
5	7/26-7/28	42	13	5	87	4.30	25	2,762	2,763	0.74	6,495
6	7/29-7/31	42	13	2	23	3.45	9	1,119	1,491	0.75	3,107
7	8/02-8/04	42	7	0	17	4.30	4	399	997	0.75	1,728
Subtotal		294	15	278	750		447	22,360	18,332		46,890
Guideline Harvest Range:							600 to 800 Chinook				13,000 to 38,000 Summer Chum Salmon

District 6 Fall Season

Period	Date	Hours Opened [c]	Number of Fishermen	Coho Salmon Number	Coho Salmon Pounds of Roe	Coho Expansion Roe Weight [a]	Coho Expansion Estimated Harvest [b]	Fall Chum Salmon Number	Fall Chum Salmon Pounds of Roe	Fall Chum Expansion Roe Weight [a]	Fall Chum Expansion Estimated Harvest [b]
8	9/13-9/14	24	16	419	598	1.27	889	4,030	1,089	0.89	5,254
9	9/20-9/21	24	17	779	3,126	1.48	2,650	2,507	4,153	0.65	7,862
10	9/27-9/28	24	15	2,606	1,105	1.46	3,363	3,329	931	0.84	4,438
Subtotal		72	19	3,803	4,829		7,142	10,266	6,173		17,574
Guideline Harvest Range:								2,750 to 20,500 Fall Chum Salmon			

[a] Estimated average roe weight in pounds per female used in expansion.
[b] Estimated harvest is the number of fish sold in the round plus estimated number of females harvested to produce roe sold.
[c] Subdistrict 6-A (Statistical area 334-61) fished one 24-hour commercial period per week, and Subdistricts 6-B and 6-C (Statistical Areas 334-62 and 334-63) fished one 42-hour commercial period each week.

Table 11. Yukon River drainage commercial salmon sales and estimated harvest by district and country, 1996. a

Districts	Number of Fishermen c	Chinook			Summer Chum			Fall Chum			Coho		
		Sold in Round	Pounds of Roe	Estimated Harvest b	Sold in Round	Pounds of Roe	Estimated Harvest b	Sold in Round	Pounds of Roe	Estimated Harvest b	Sold in Round	Pounds of Roe	Estimated Harvest b
1	455	56,642	0	56,642	92,506	0	92,506	33,629	0	33,629	27,705	0	27,705
2	217	30,209	0	30,209	30,727	0	30,727	29,651	0	29,651	20,974	0	20,974
Subtotal	627	86,851	0	86,851	123,233	0	123,233	63,280	0	63,280	48,679	0	48,679
Subtotal District 3	9	0	0	0	0	935	1,534 d	0	0	0	0	0	0
Total Lower Yukon	628	86,851	0	86,851	123,233	935	124,767	63,280	0	63,280	48,679	0	48,679
Anvik River	23	0	0	0	0	76,318	84,663	0	0	0	0	0	0
4-A	62	0	0	0	0	181,050	356,938 d	0	0	0	0	0	0
4-BC	22	45	202	137	0	37,822	68,639 d	2,918	0	2,918	161	0	161
Subtotal District 4	87	45	202	137	0	295,190	510,240 d	2,918	0	2,918	161	0	161
5-ABC	27	2,049	518	2,309	0	188	209	7,481	8,498	17,461	0	0	0
5-D	2	448	0	448	0	114	127	4,397	0	4,397	0	0	0
Subtotal District 5	29	2,497	518	2,757	0	302	336	11,878	8,498	21,858	0	0	0
Subtotal District 6	19	278	750	447	22,360	18,332	46,890	10,266	6,173	17,574	3,803	4,829	7,142
Total Upper Yukon	135	2,820	1,470	3,341	22,360	313,824	557,466	25,062	14,671	42,350	3,964	4,829	7,303
Total Alaskan	763	89,671	1,470	90,192	145,593	314,759	682,233	88,342	14,671	105,630	52,643	4,829	55,982
Total Canada	28	10,164	0	10,164	0	0	0	20,069	0	20,069	0	0	0
Grand Total	791	99,835	1,470	100,356	145,593	314,759	682,233	108,411	14,671	125,699	52,643	4,829	55,982

a Does not include ADF&G test fishery sales.
b Unless otherwise noted, estimated harvest is the number of fish sold in the round plus the estimated number of females harvested to produce roe sold (pounds of roe sold divided by weighted average roe weight per female).
c Number of unique permits fished by district, subdistrict or area. Totals by area may not add up due to transfers between districts or subdistricts.
d Estimated harvest includes both males and females harvested to produce roe sold (pounds of roe sold divided by weighted average roe weight per female divided by average percent females in the harvest). Summer chum salmon sold in the round in District 4 are assumed to be males and are included in the estimated harvest calculation.

Table 12. Salmon sold from Department test fishing catches, Yukon Area, 1996.

District	Chinook	Summer Chum	Fall Chum	Coho
1 [a]	1,698	7,309	1,717	1,728
2	0	0	0	0
Lower Yukon Total	1,698	7,309	1,717	1,728

[a] Sales reported in numbers of fish sold in the round from the set gillnet test fishery.

Table 13. Combined subsistence and personal use salmon harvest estimates, test fish harvests given away for subsistence use, and related information, Yukon River, 1996. a

Village	Survey Date or Permit Village		Fishing Households b	Dogs	Estimated Harvest Chinook	Summer Chum	Fall Chum	Coho	Primary Gear Used Set Nets	Drift Nets	Fish Wheels
Hooper Bay	9/13, 9/27	c	109	219	1,127	15,870	392	92	105	0	0
Scammon Bay	9/14		55	187	1,238	6,365	0	0	55	0	0
Coastal District Total			164	406	2,365	22,235	392	92	160	0	0
Sheldon Pt	9/9		21	85	450	2,634	21	138	21	3	0
Alakanuk	9/6-9/7, 9/29		52	187	662	6,171	100	103	35	17	0
Emmonak	9/5-9/8	d	62	178	702	6,097	1,501	594	16	46	0
Kotlik	9/10	e	50	232	1,832	12,387	2,525	1,610	24	24	0
District 1 Subtotal			183	682	3,646	27,289	4,147	2,445	96	90	0
Mt. Village	9/18, 9/20	f	74	260	1,315	9,285	1,366	276	5	69	0
Pitkas Pt.	9/19		22	77	762	1,619	603	691	2	19	0
St. Marys	9/16-9/18, 9/20		63	171	1,766	6,736	658	292	6	52	0
Pilot Station	9/24-9/25	g	52	117	1,811	6,355	448	1,258	21	31	0
Marshall	9/23		46	419	2,126	4,431	2,212	958	14	32	0
District 2 Subtotal			257	1,044	7,780	28,426	5,287	3,475	48	203	0
Russian Mission	9/21		40	201	2,709	3,554	587	255	20	20	0
Holy Cross	9/21		33	99	3,953	1,700	1,814	0	23	16	0
Shageluk	9/24		16	213	121	6,114	305	189	16	0	0
District 3 Subtotal			89	513	6,783	11,368	2,706	444	59	36	0
Lower Yukon River Drainage Total			540	2,239	18,209	67,083	12,140	6,364	203	329	0
Anvik	9/24-9/25		20	78	768	185	457	44	9	4	5
Grayling	9/26		36	148	1,036	587	1,759	236	22	7	2
Kaltag	10/10		40	102	994	31	1,049	298	6	14	20
Nulato	10/8-10/9		51	305	1,461	1,003	2,299	149	12	19	17
Koyukuk	10/8		10	117	402	41	2,458	476	4	4	2
Galena	10/7, 10/11		7	312	2,770	3,902	6,620	780	38	5	27
Ruby	10/14		8	96	557	2,016	561	376	7	0	1
District 4 Yukon R. Subtotal			236	1,158	7,988	7,765	15,203	2,359	98	53	74
Huslia	10/9		10	193	67	2,372	298	18	10	0	0
Hughes	10/10		5	70	54	1,411	274	51	5	0	0
Allakaket	10/21		18	113	82	4,668	961	39	16	0	0
Alatna	10/21		2	11	2	209	0	0	2	0	0
Bettles	10/22		2	62	0	0	50	0	2	0	0
Koyukuk R. Subtotal			37	449	205	8,660	1,583	108	35	0	0
District 4 Subtotal			273	1,607	8,193	16,425	16,786	2,467	133	53	74
Tanana	10/15-10/16		56	472	2,741	5,190	21,420	6,110	21	0	34
Rampart	10/22		13	46	1,751	1,188	896	5	10	0	3
Fairbanks NSB	permits	h	30	191	1,166	2,958	2,727	42	25	0	5
Stevens Village	10/16, permits	j	7	67	681	530	991	2	7	0	0
Birch Creek	10/23		1	13	0	0	0	0	0	0	0
Beaver	10/16		13	47	886	572	9	7	12	0	0
Ft. Yukon	10/30-11/01	k	69	422	4,957	26	8,144	157	37	0	32
Circle	permits	m	8	65	1,781	271	5,308	0	4	0	4
Central	permits	n	5	14	131	53	132	0	5	0	0
Eagle	permits	o	32	214	1,092	105	14,916	1	25	0	7
Other	permits	p	5	22	377	616	505	0	3	0	1
District 5 Yukon R. Subtotal			230	1,573	15,563	11,509	55,048	8,324	149	0	86

-Continued-

Table 13. (page 2 of 2)

Village	Survey Date or Permit Village		Fishing Households b	Dogs	Estimated Harvest: Chinook	Summer Chum	Fall Chum	Coho	Primary Gear Used: Set Nets	Drift Nets	Fish Wheels
Venetie	10/21-10/22		6	155	134	0	7,195	264	6	0	0
Chalkyitsik	10/29-10/30		4	67	30	0	1,230	0	3	0	1
Chandalar/Black Rivers Subtotal			10	222	164	0	8,425	264	9	0	1
District 5 Subtotal			248	1,795	15,727	11,509	63,473	6,588	158	0	87
Manley	permits	q	16	425	134	1,219	10,662	2,462	10	0	6
Minto	permits	r	33	316	523	1,421	4,381	1,223	23	0	9
Nenana	permits	s	32	481	423	4,411	14,210	7,883	17	0	15
Healy	permits	t	4	96	0	33	1,384	1,011	4	0	0
Fairbanks NSB	permits	u	94	226	312	1,295	6,084	2,509	79	0	4
Delta Junction	permits	v	5	3	0	2	91	3	5	0	0
Other	permits	w	13	147	0	10	11	0	13	0	0
District 6 Tanana R. Subtotal			197	1,694	1,392	8,391	36,823	15,091	151	0	34
Upper Yukon River Drainage Total			717	5,096	25,312	36,325	117,082	24,146	442	53	195
Alaska, Yukon River Drainage Total			1,257	7,335	43,521	103,408	129,222	30,510	645	382	195
Survey Village Subtotals			1,144	5,541	38,592	105,921	65,232	14,460	592	382	144
Permit Area Subtotals			277	2,200	5,939	12,394	60,411	15,134	213	0	51
Test Fish Subtotals		x			1,355	7,328	2,971	1,008			
Alaska, Yukon Area Total (including coastal communities)			1,421	7,741	45,856	125,643	129,614	30,602	805	382	195

a Data collected by Alaska Department of Fish and Game, (ADF&G) Commercial Fisheries Management and Development Division. Survey data is expanded for number of fishing households, number of dogs, and harvest. Permit data is unexpanded, the number of dogs is based on information obtained from permits issued, while the number of fishing households and their harvest is based on returned permits. Gear data represents the primary gear types used by fishing households.

b Estimated number of households that fished in surveyed communities or number of permit households who reported fishing in permit required areas.

c A 1986 Hooper Bay salmon tagging study conducted by the Bering Sea Fishermen's Association (BSFA) suggested that harvests in the Nuok Spit area of Hooper Bay intercepted Yukon River and Norton Sound chum salmon stocks.

d Includes 329 chinook, 879 summer chum, 693 fall chum, and 326 coho salmon from ADF&G test fish catches.

e Includes 1,026 chinook, 6,173 summer chum, 728 fall chum, and 429 coho salmon from ADF&G test fish catches.

f Includes 319 fall chum and 228 coho salmon from BSFA test fish catches.

g Includes 276 summer chum, 150 fall chum, and 25 coho salmon from ADF&G test fish catches.

h Fairbanks North Star Borough households that obtained a permit to fish in a Yukon River permit required area. Of the 46 permits issued, 43 returned their permits, and 30 indicated that they fished.

j Permit harvest information from Stevens Village residents was used to compliment the information obtained by the survey.

k Includes 1,081 fall chum salmon from Council of Athabaskan Tribal Governments (CATG) test fish catches.

m Of the 11 permits issued in Circle, 11 returned their permits and 8 indicated that they fished.

n Of the 7 permits issued in Central, 7 returned their permits and 5 indicated that they fished.

o Of the 56 permits issued in Eagle, 55 returned their permits and 32 indicated that they fished.

p Other includes residents of Manley, Minto, Nenana, and the Upper Tanana River drainage villages of Northway and Tok, who obtained a household permit to fish in a Yukon River permit required area. Of the 10 permits issued, 10 returned their permits and 5 indicated that they fished.

q Of the 23 permits issued in Manley, 21 returned their permits and 16 fished.

r Of the 77 permits issued in Minto, 63 returned their permits and 33 indicated that they fished. Includes 32 Tolovana River Pike permits.

s Of the 48 permits issued in Nenana, 2 were personal use permits and 46 were subsistence permits, 46 returned their permits and 32 indicated that they fished. Includes 3 households that obtained a permit to fish on the Kantishna River.

t Of the 9 permits issued in Healy, 9 returned their permits and 4 indicated that they fished. Includes one household that obtained a permit to fish on the Kantishna River.

u Fairbanks North Star Borough fishermen who obtained a permit to fish the Tanana River. Of the 182 permits issued, 125 were personal use permits and 57 were subsistence permits, 175 returned their permits and 94 indicated that they fished. Includes 38 Tolovana River Pike permits. Includes 6 households that obtained personal use salmon permits and 2 switched to whitefish permits and 4 switched to Tolavana River Pike permits.

v Of the 5 permits issued for the Tanana River in Delta, 4 were personal use permits one was subsistence, 5 returned their permits and 5 indicated that they fished.

w Other includes residents of Anchorage, Cantwell, Mountain Village, and the Upper Tanana River drainage villages, Dot Lake, Northway, Slana, Tanacross, and Tok who fished in the Tanana River. Of the 41 permits issued, 1 was a personal use permit and 40 were subsistence permits, 37 returned their permits and 12 indicated that they fished.

x Test fish given away for subsistence use.

Table 14. Reported subsistence and personal use salmon harvested under the authority of a permit, listed by permit area, Yukon Area, 1996. [a]

Permit Fishing Area	Permit Type	Permit Issued	Permit Returned	Percent Returned	Number of Permits Returned that Fished	Reported Harvest: Chinook	Summer Chum	Fall Chum	Coho
Subsistence Use									
Yukon River near Haul Road Bridge	SY	47	45	96%	31	1,157	3,475	2,727	42
Yukon River near Circle and Eagle	SE	86	84	98%	51	3,458	528	20,861	1
Tanana River Subdistrict 6A	SA	26	24	92%	19	183	1,305	17,237	4,822
Tanana River Subdistrict 6B	SB	105	96	91%	59	968	6,138	17,439	8,934
Tanana River Upstream of Subdistrict 6C	SU	42	39	93%	15	0	10	97	0
Kantishna River Subdistrict 6A	SK	5	5	100%	4	26	33	1,694	1,137
Tolovana River Pike	ST	74	64	86%	24	0	0	0	0
Subsistence Permit Subtotals		385	357	93%	203	5,792	11,489	60,055	14,936
Personal Use									
Tanana River Subdistrict 6C	PC	129	125	97%	73	215	905	356	198
Tanana River Whitefish	PW	4	4	100%	3	0	0	0	0
Personal Use Permit Subtotals		133	129	97%	76	215	905	356	198
Permit Totals		518 [b]	486	94%	279 [c]	6,007	12,394	60,411	15,134

a Includes permit information received as of April 10, 1997.
b Includes 32 households that were issued permits for two different areas, including 21 Minto households who were issued both pike and salmon permits.
c Includes one household that fished in two different permit areas.

Table 15. Yukon River drainage total utilization of salmon by district and country, 1996. a,b

District	Fishery	Chinook	Summer Chum	Fall Chum	Coho
1	Commercial	56,642	92,506	33,629	27,705
	Subsistence	3,646	27,289	4,147	2,445
	Test Fish Sales	1,698	7,309	1,717	1,728
	Total	61,986	127,104	39,493	31,878
2	Commercial	30,209	30,727	29,651	20,974
	Subsistence	7,780	28,426	5,287	3,475
	Test Fish Sales	0	0	0	0
	Total	37,989	59,153	34,938	24,449
3	Commercial	0	0	0	0
	Commercial Related c	0	1,534	0	0
	Subsistence	6,783	11,368	2,706	444
	Total	6,783	12,902	2,706	444
Total Lower Yukon	Commercial	86,851	123,233	63,280	48,679
	Commercial Related c	0	1,534	0	0
	Subsistence	18,209	67,083	12,140	6,364
	Test Fish Sales	1,698	7,309	1,717	1,728
	Total	106,758	199,159	77,137	56,771
4	Commercial	45	0	2,918	161
	Commercial Related c	92	510,240	0	0
	Subsistence	8,193	16,425	16,786	2,467
	Total	8,330	526,665	19,704	2,628
5	Commercial	2,497	0	11,678	0
	Commercial Related c	260	336	9,580	0
	Subsistence	15,727	11,509	63,473	6,588
	Total	18,484	11,845	85,331	6,588
6	Commercial	278	22,360	10,266	3,803
	Commercial Related c	169	24,530	7,308	3,339
	Subsistence	1,177	7,486	36,467	14,893
	Personal use	215	905	356	198
	Total	1,839	55,281	54,397	22,233
Total Upper Yukon	Commercial	2,820	22,360	25,062	3,964
	Commercial Related c	521	535,106	17,298	3,339
	Subsistence	25,097	35,420	116,726	23,948
	Personal use	215	905	356	198
	Total	28,653	593,791	159,432	31,449
Total Yukon Area (Alaska)	Commercial	89,671	145,593	88,342	52,643
	Commercial Related c	521	536,640	17,298	3,339
	Subsistence	43,306	102,503	128,836	30,312
	Personal use	215	905	356	198
	Sport Fish d	3,151	1,854	0	1,588
	Test Fish Sales	1,698	7,309	1,717	1,728
	Total	138,562	794,804	236,539	89,808
Total Canada	Commercial	10,164	0	20,039	0
	Aboriginal f	8,658	0	4,235	41
	Sport Fish	850	0	0	0
	Total	19,672	0	24,354	41
Grand Total	Commercial	99,835	145,593	108,411	52,643
	Commercial Related c	521	536,640	17,298	3,339
	Subsistence g	51,964	102,503	133,151	30,353
	Personal use	215	905	356	198
	Sport Fish	4,001	1,854	0	1,588
	Test Fish Sales	1,698	7,309	1,717	1,728
	Total	158,234	794,804	260,933	89,849

a Commercial harvest includes only fish sold in the round.

b Does not inlude 2,365 chinook, 22,235 summer chum, 392 fall chum, and 92 coho salmon harvested in Hooper and Scammon Bay for subsistence use.

c Commercial related is the estimated harvest of females to produce roe sales; the estimated harvest of male summer chum salmon not sold is also included in Districts 3 and 4.

d Estimated sport fish harvest in Alaskan portion of drainage, a majority of which is taken in the Tanana River drainage. A breakdown of summer and fall chum salmon is not available.

f Combined Aboriginal and domestic fisheries; includes Porcupine River Aboriginal fishery harvest.

g Includes Canadian Aboriginal and domestic fisheries; includes Porcupine River Aboriginal fishery harvest.

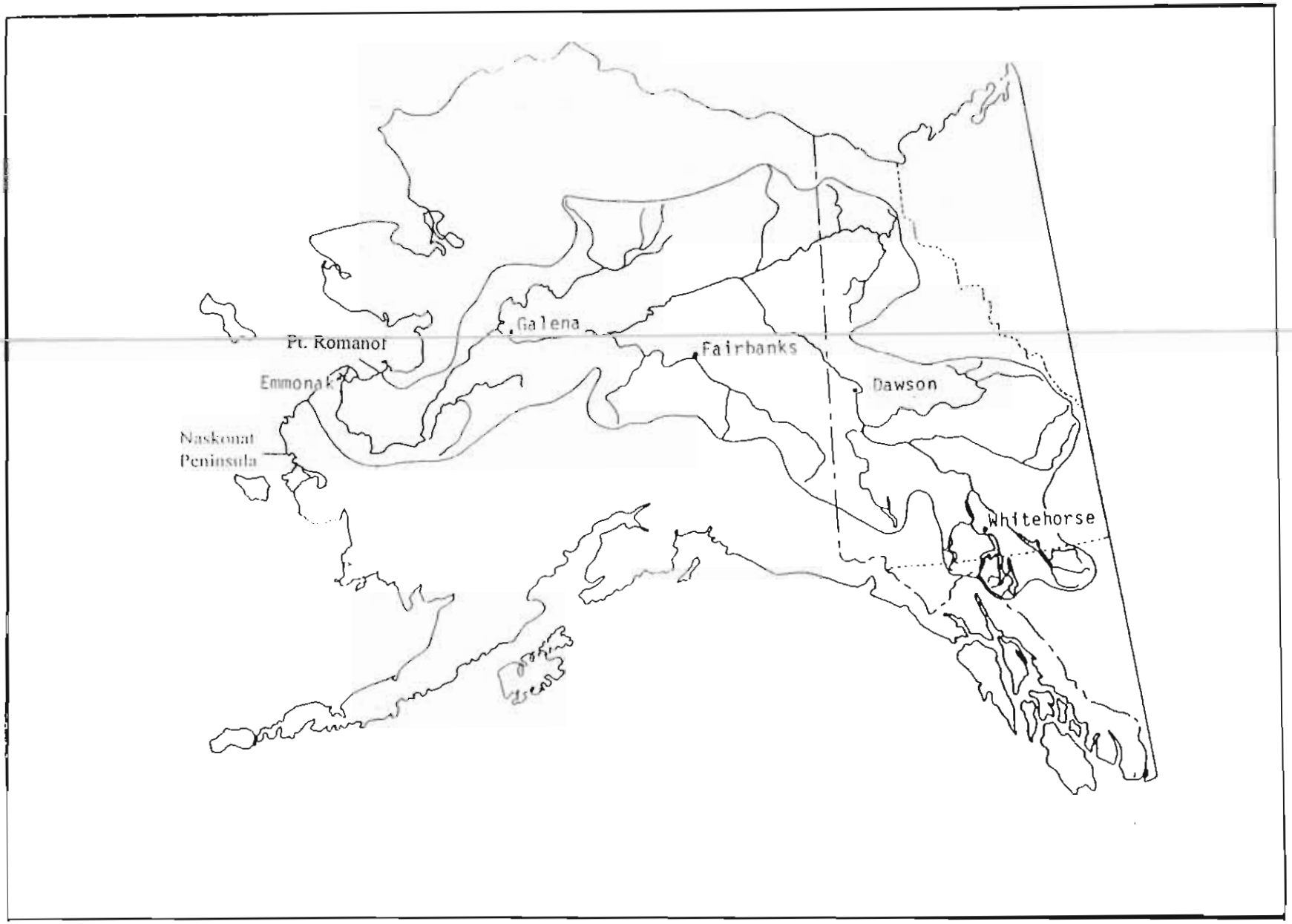

Figure 1. The Yukon River drainage, 330,000 square miles.

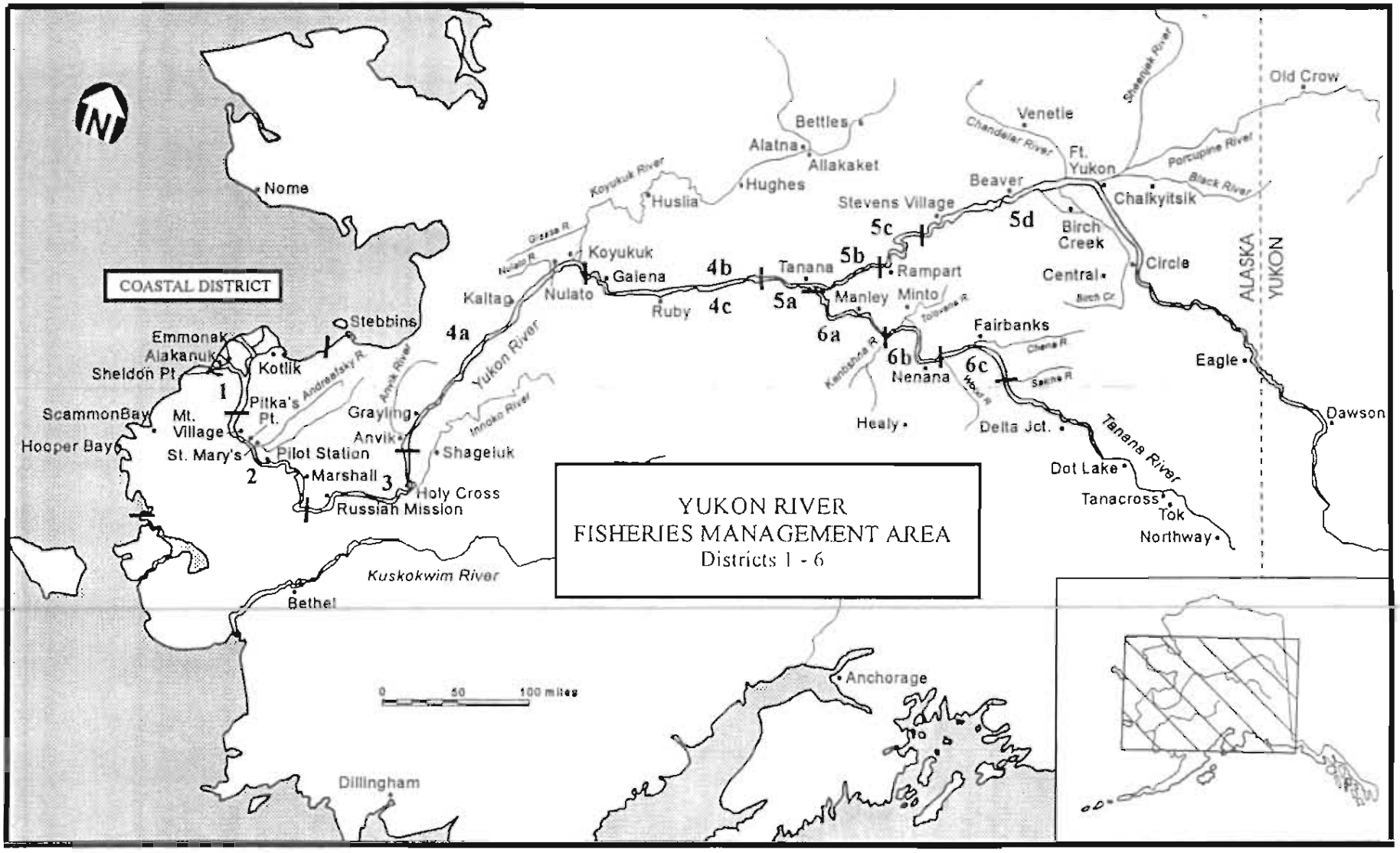

Figure 2. Map of the Alaskan portion of the Yukon River drainage showing communities and fishing districts.

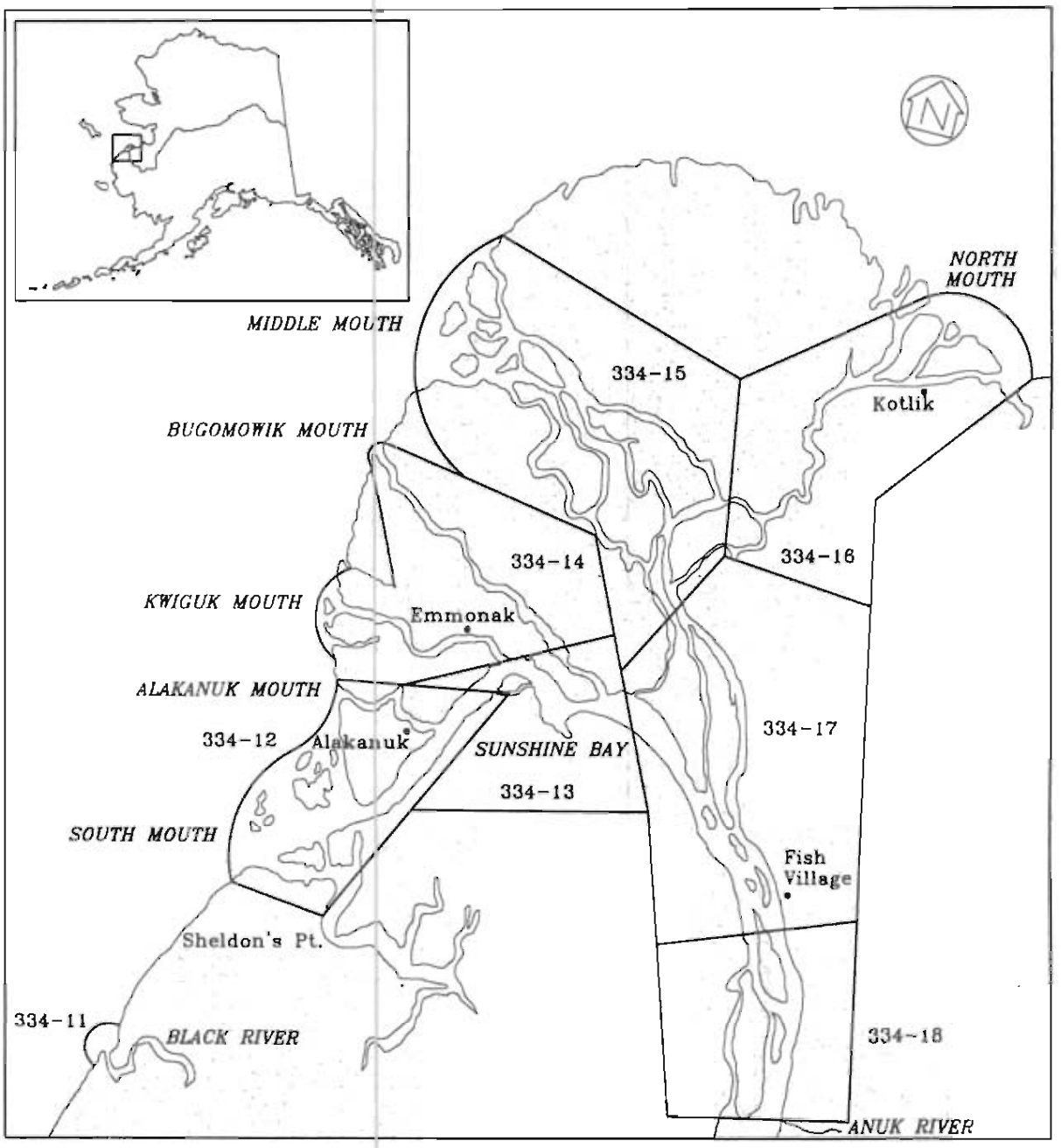

Figure 3. District 1 of Yukon management area with statistical areas.

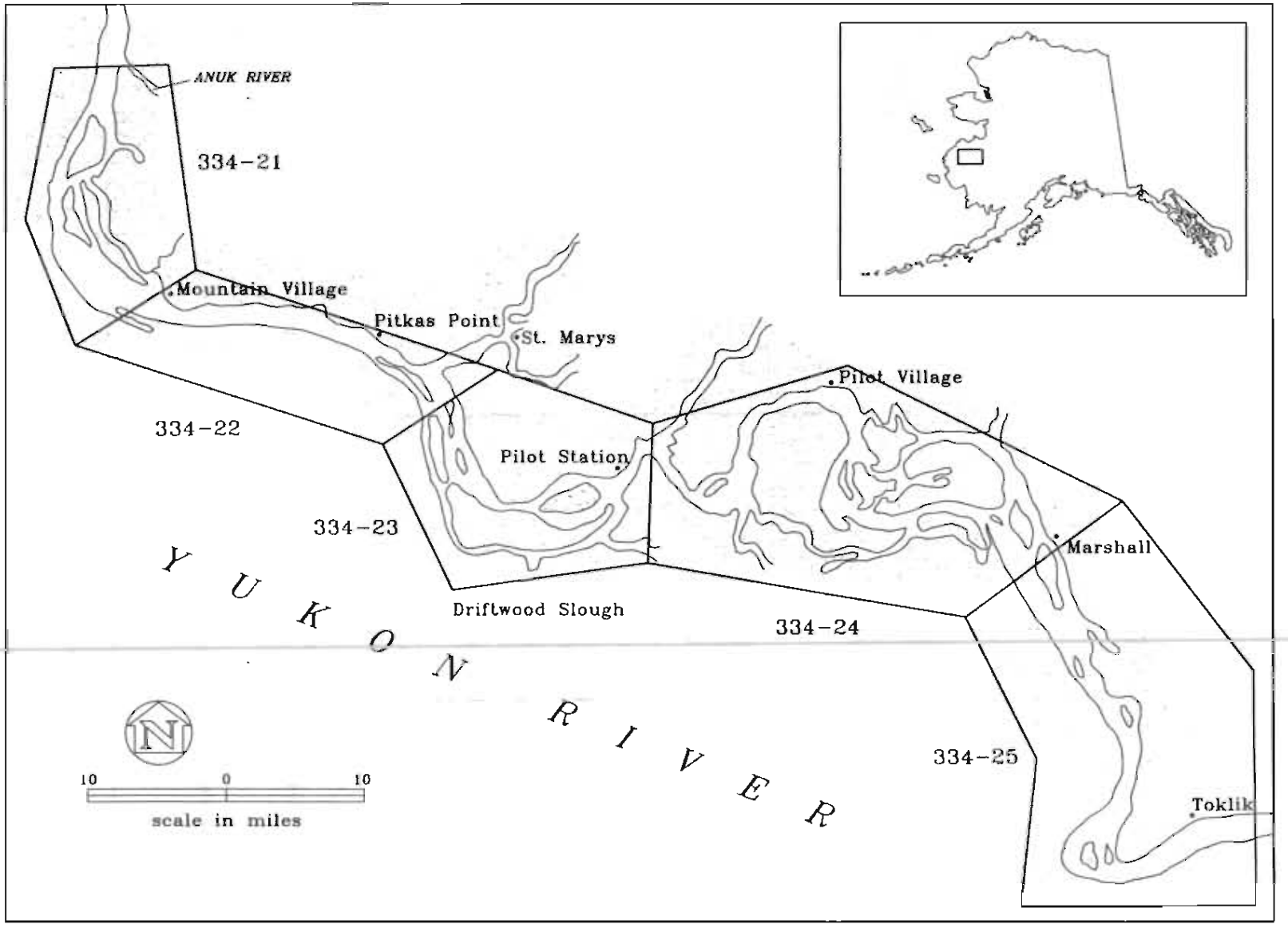

Figure 4. District 2 of Yukon management area with statistical areas.

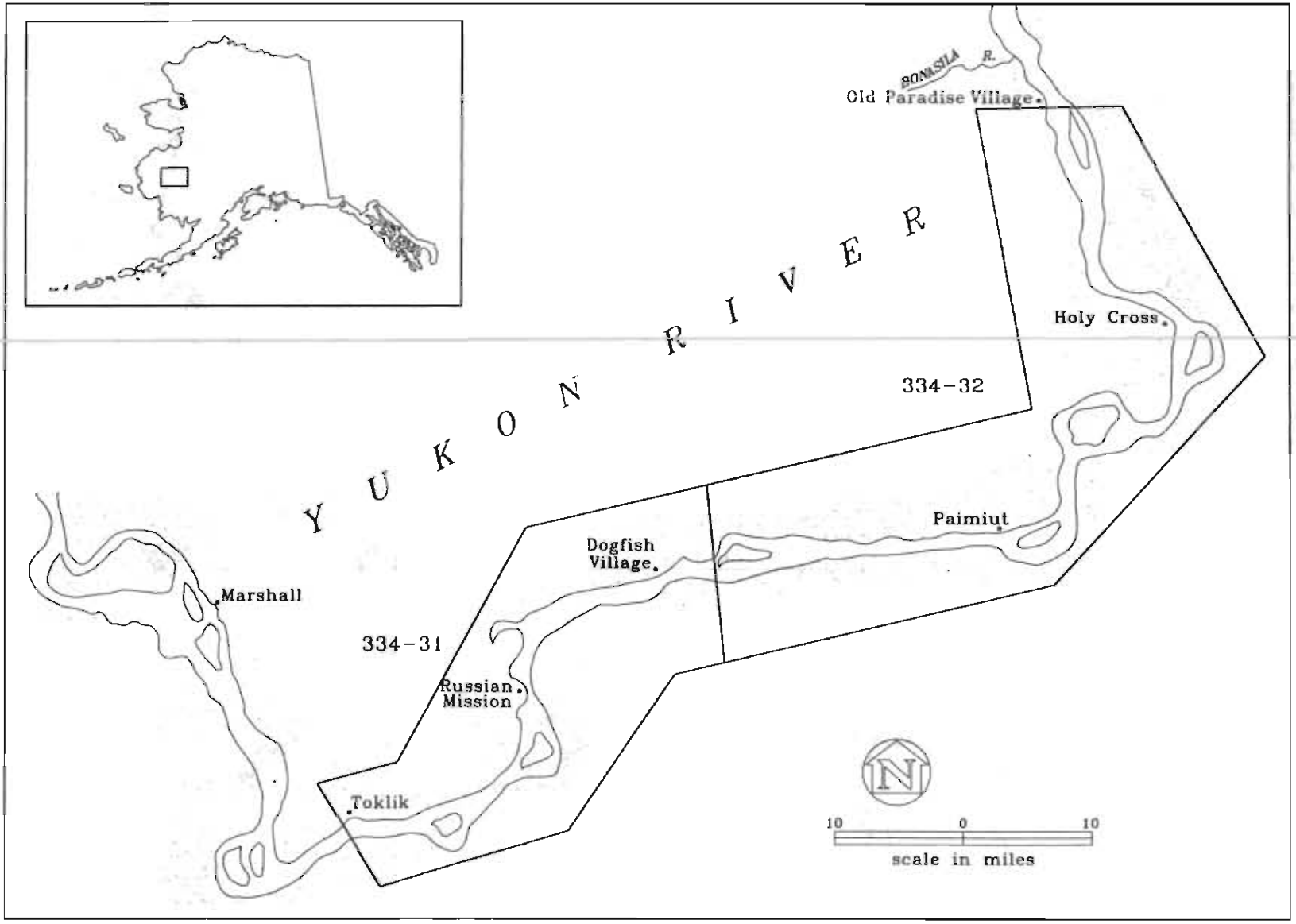

Figure 5. District 3 of Yukon management area with statistical areas.

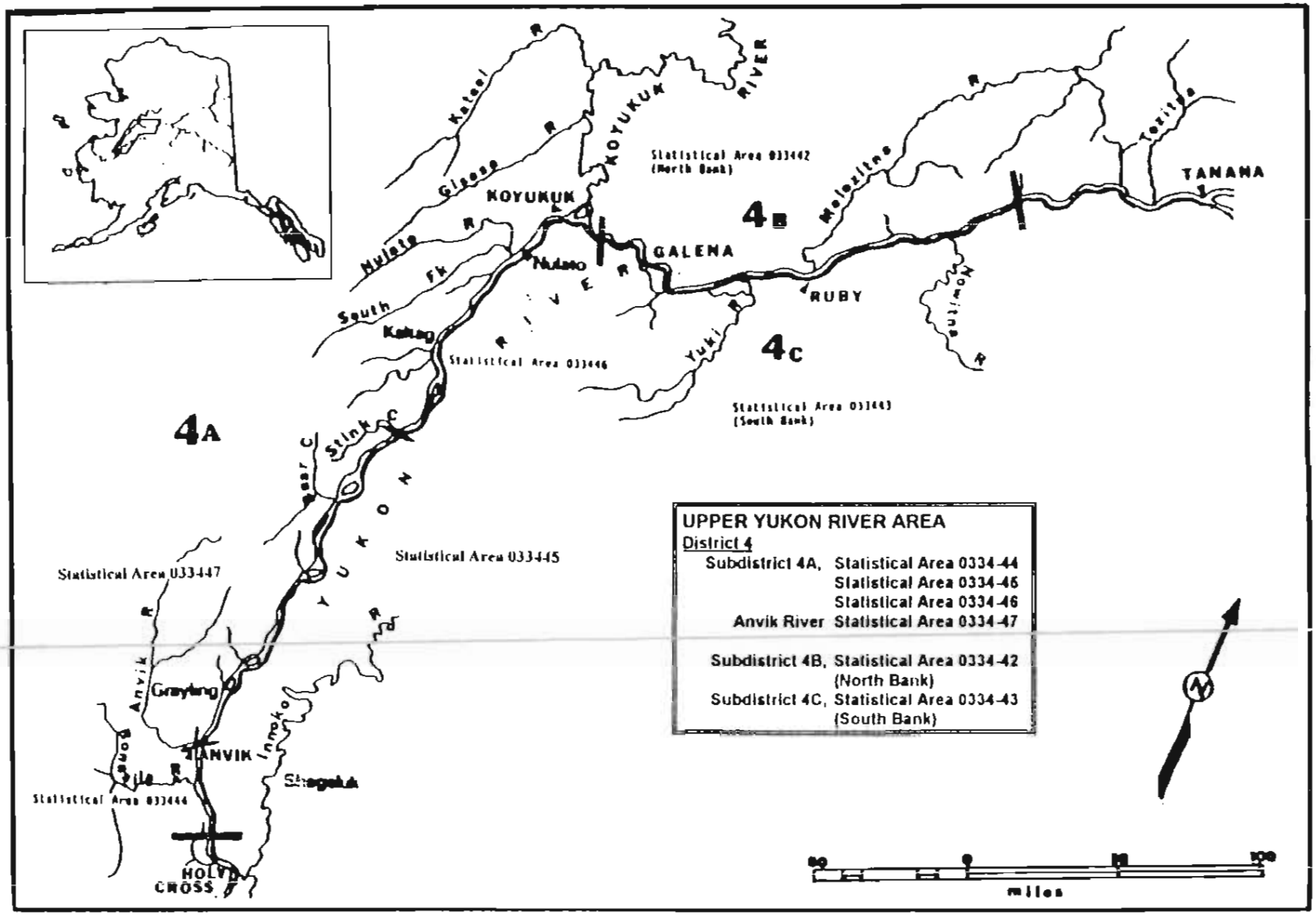

Figure 6. District 4 of Yukon Management area with statistical areas.

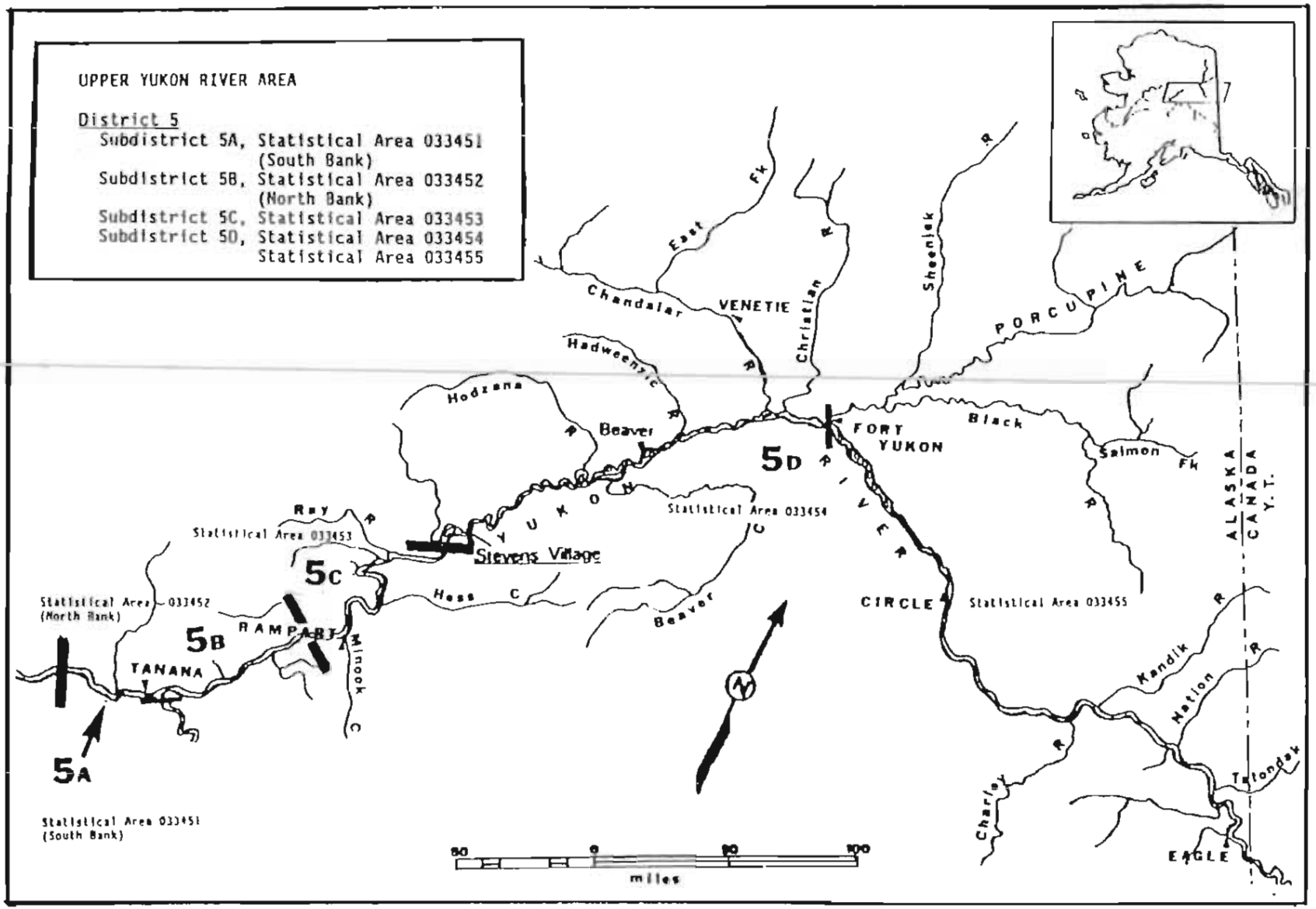

Figure 7. District 5 of Yukon management area with statistical areas.

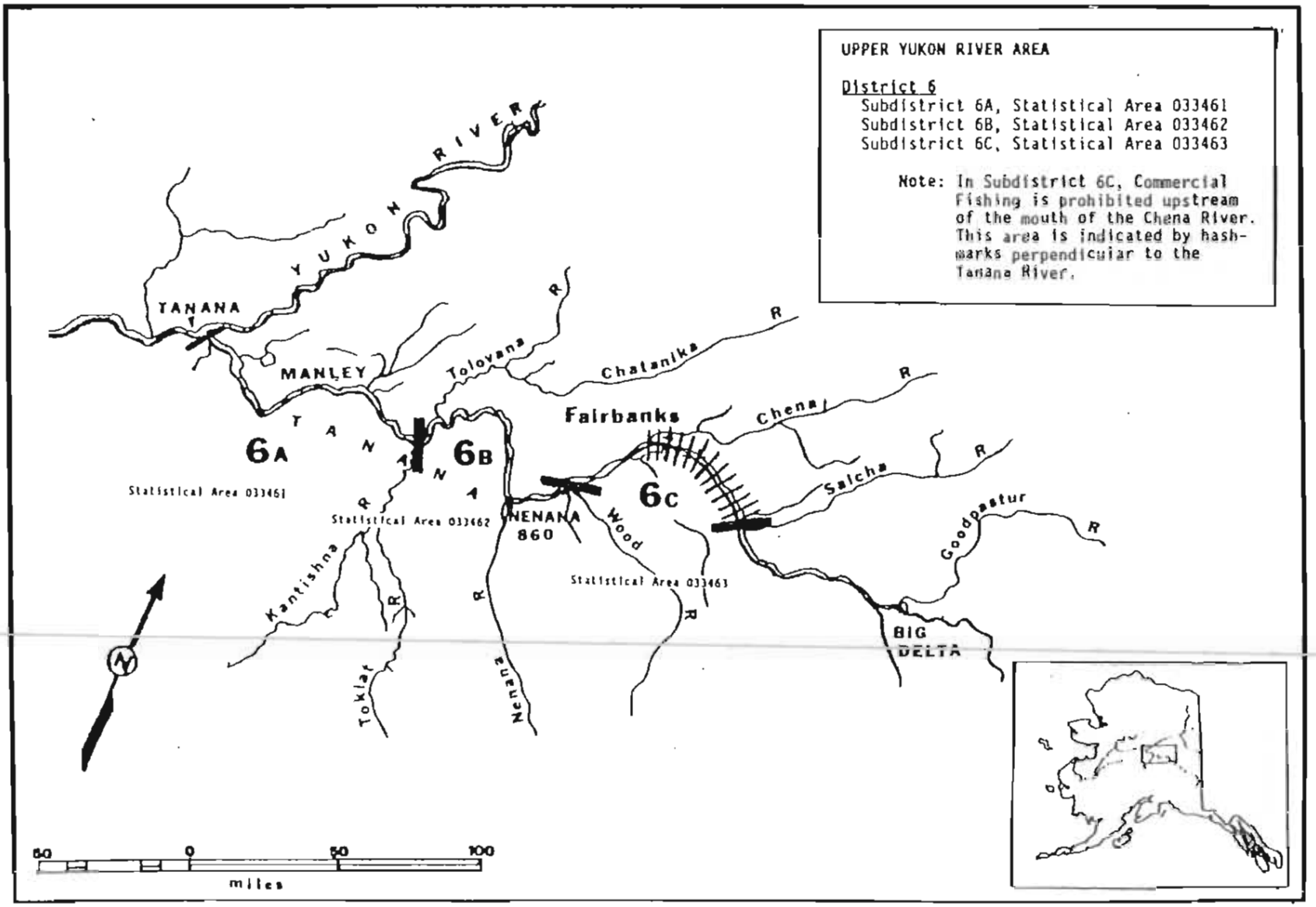

Figure 8. District 6 of Yukon management area with statistical areas.

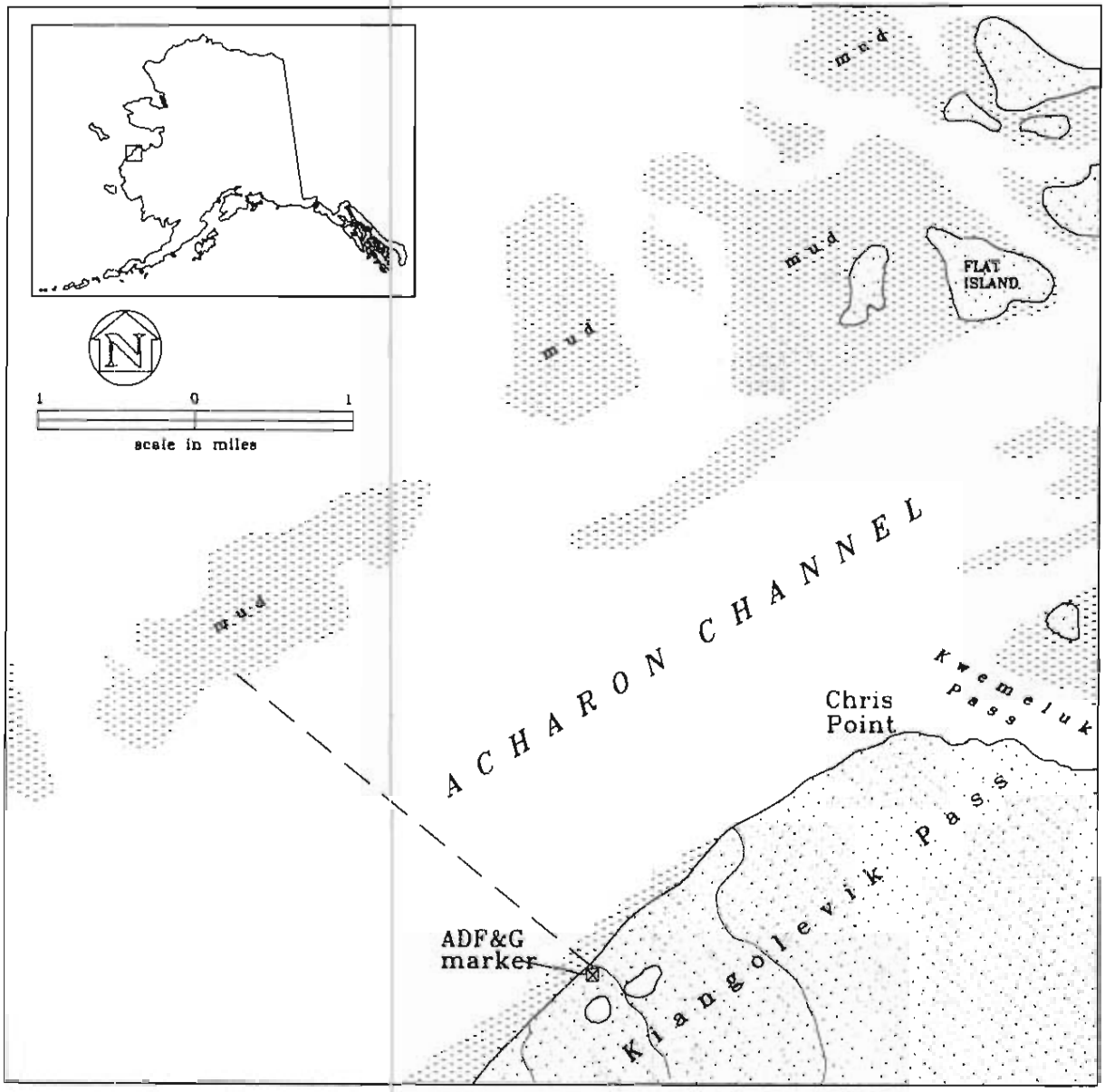

Figure 9. Closed waters of Acharon Channel, west of a 2-1/2 nautical mile long line bearing 285° from an ADF&G regulatory marker located on river bank at terminus of rivulet between two lakes approximately 2-1/2 miles below Chris Point to the opposite side of the channel; the line may be marked by a series of yellow and green barrels placed by the Department between shore markers, south mouth Yukon River.

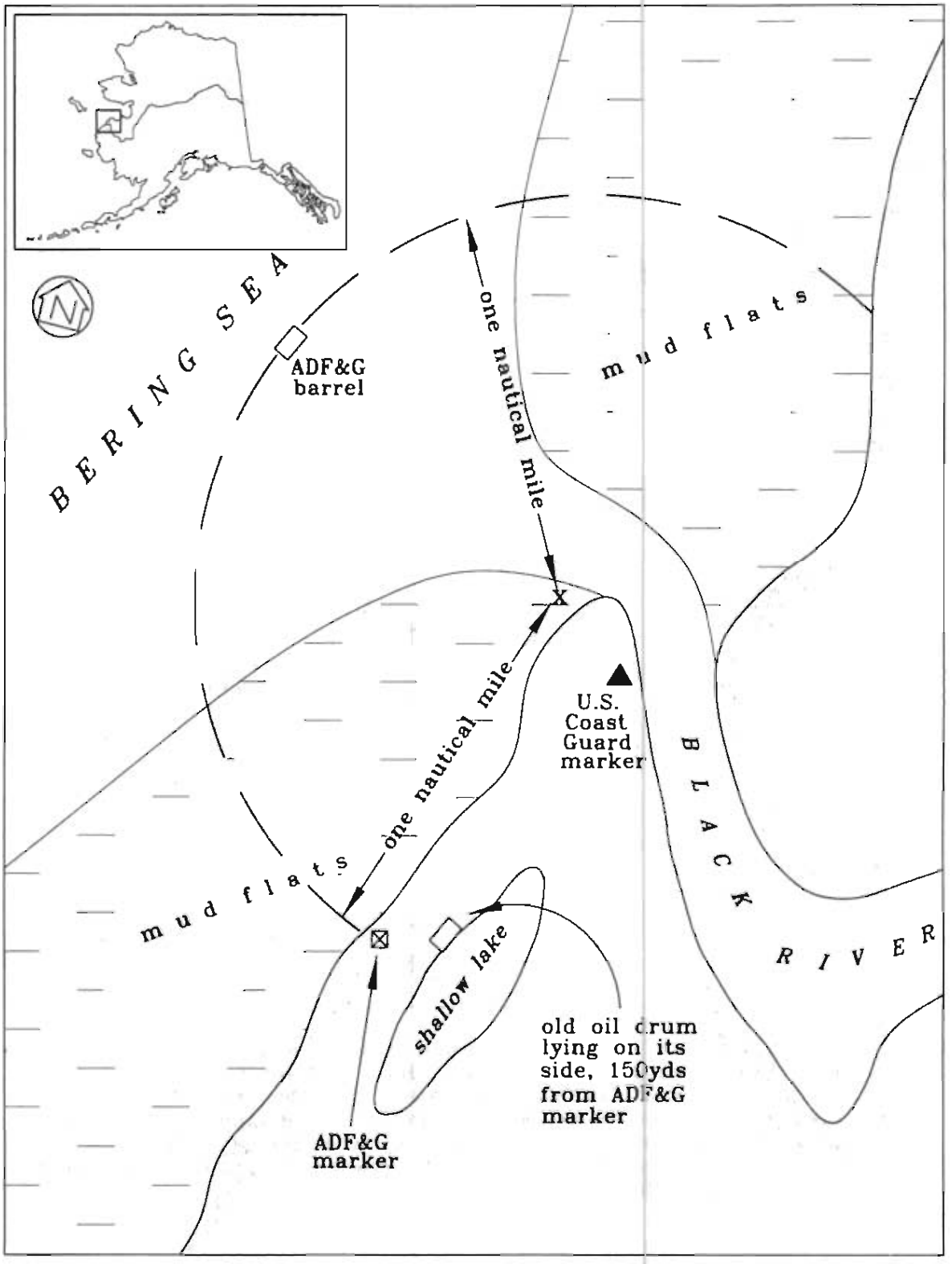

Figure 10. Closed waters west of a one nautical mile radius from the mouth of Black River, Yukon Area.

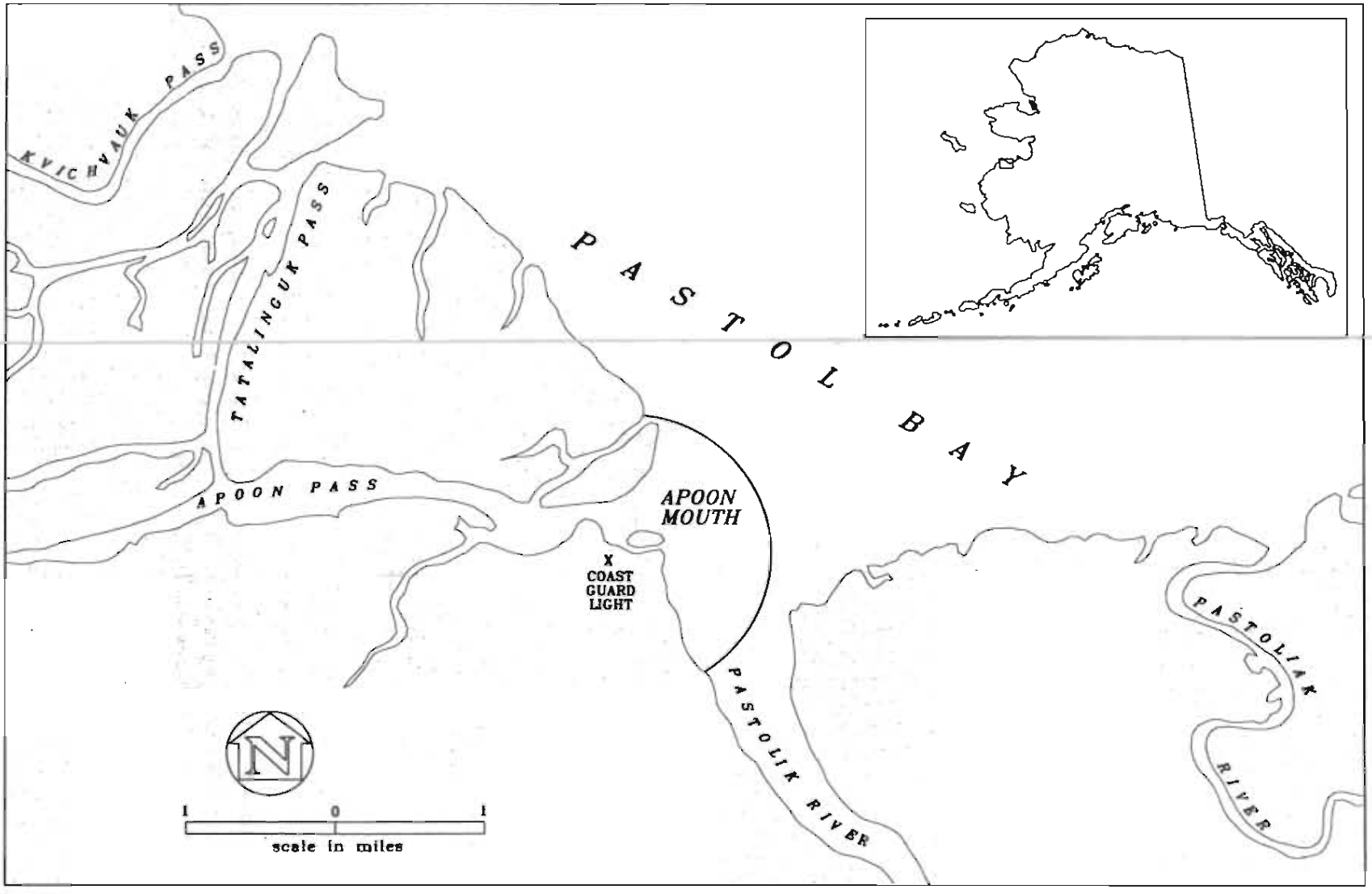

Figure 11. Closed waters east of a one nautical mile radius from a U.S. Coast Guard light at the mouth of Apoon Pass, Yukon River.

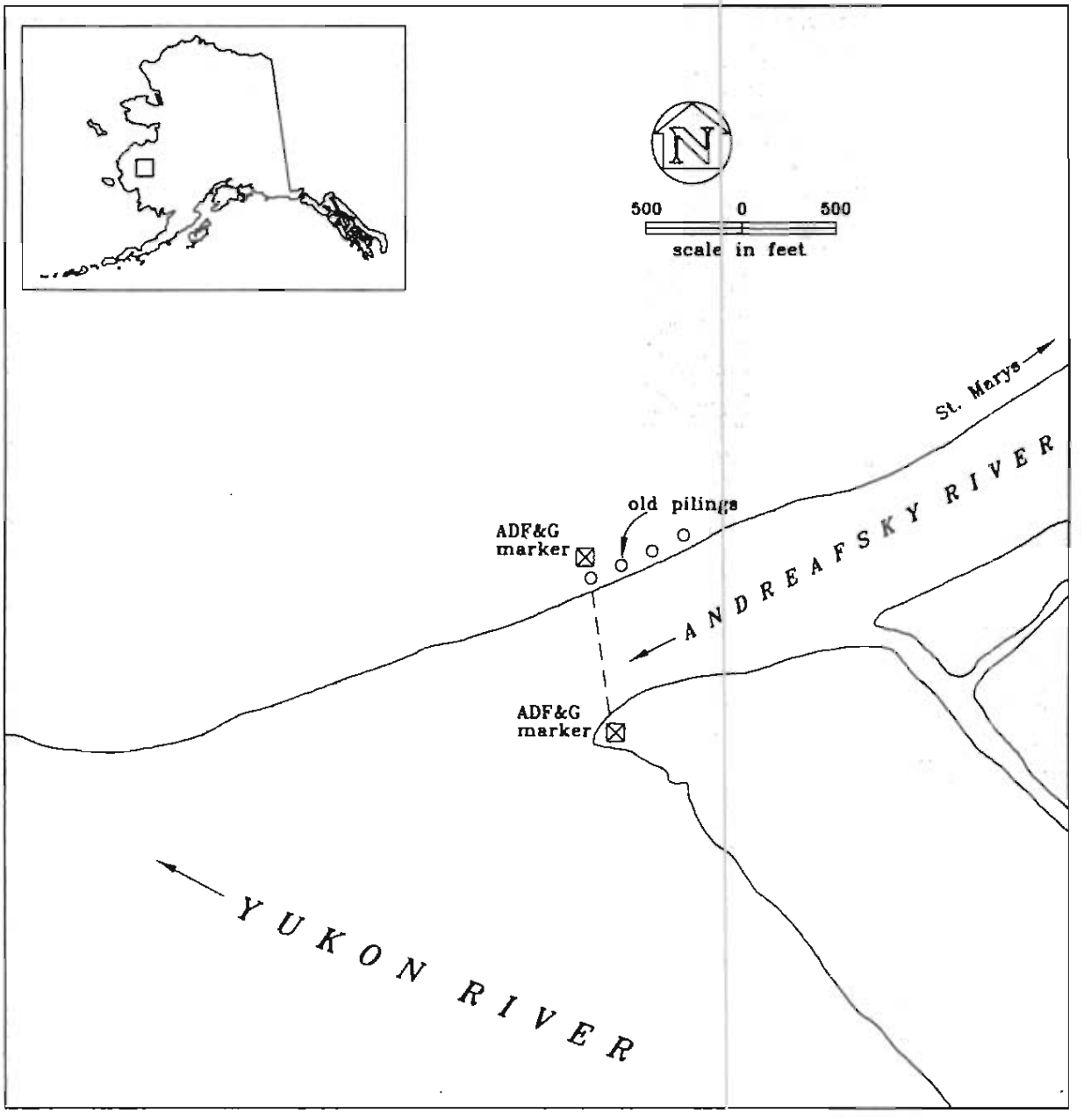

Figure 12. Closed waters of the Andreafsky River upstream of a line from Department regulatory markers placed on each side of the river at its mouth. Yukon River.

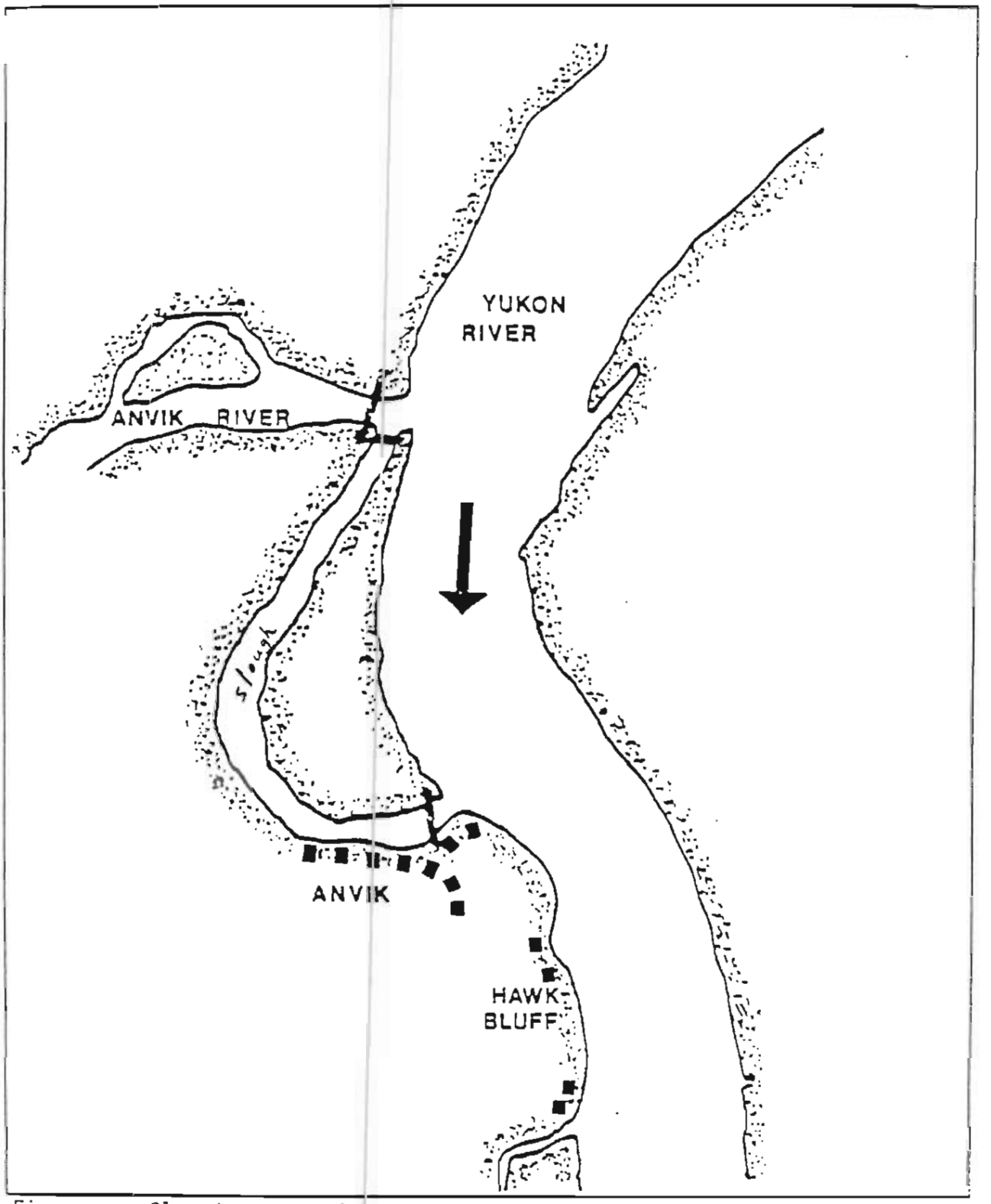

Figure 13. Closed waters of Anvik River mouth. (5AAC 05.350. (CLOSED WATERS (8) waters of the Anvik River upstream of a line between department regulatory markers placed on each side of the river at its mouth). Markers (6) placed north and south banks of the Anvik River mouth and at upstream and downstream mouths of slough (Old Anvik River Channel).

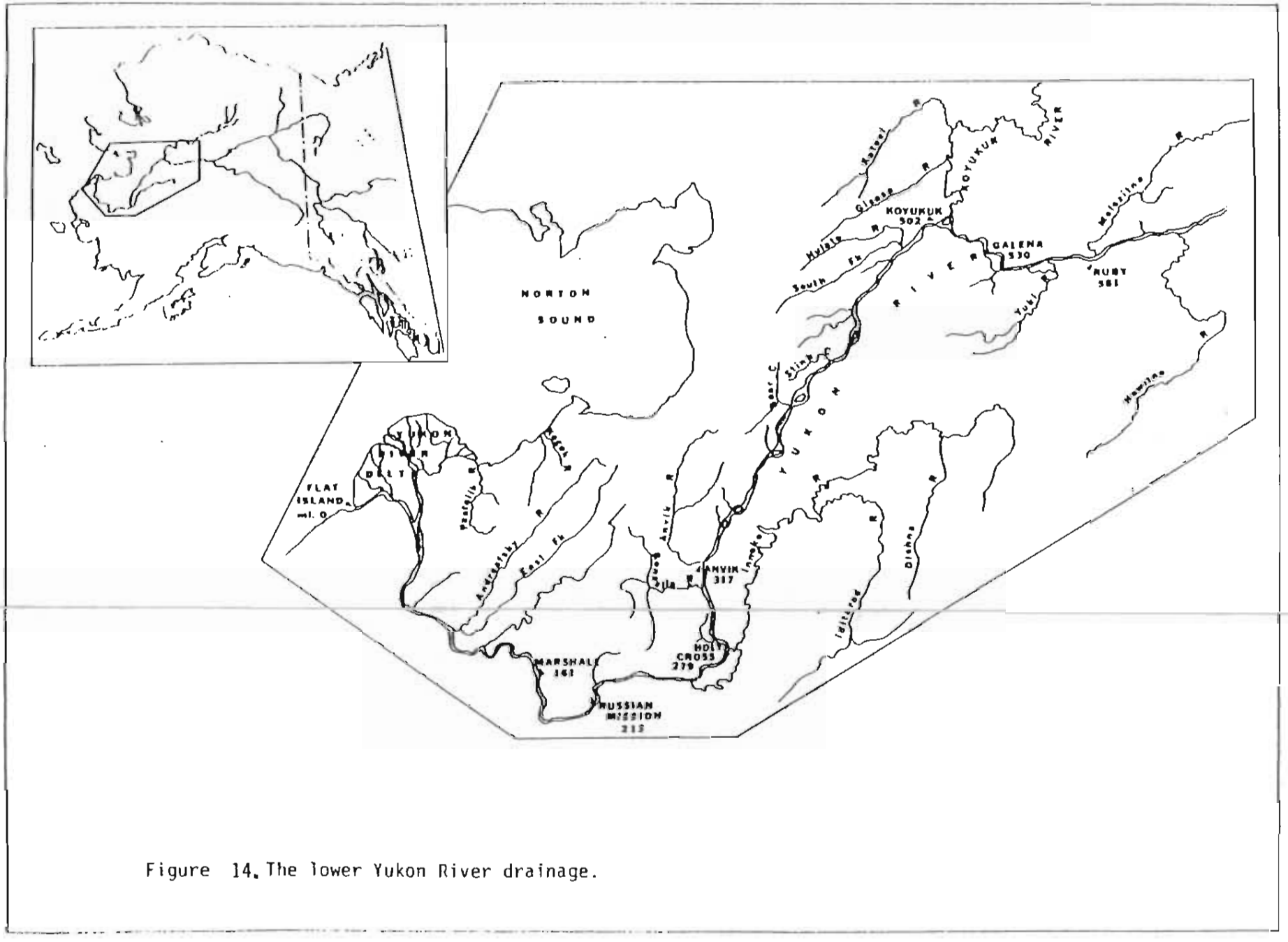

Figure 14. The lower Yukon River drainage.

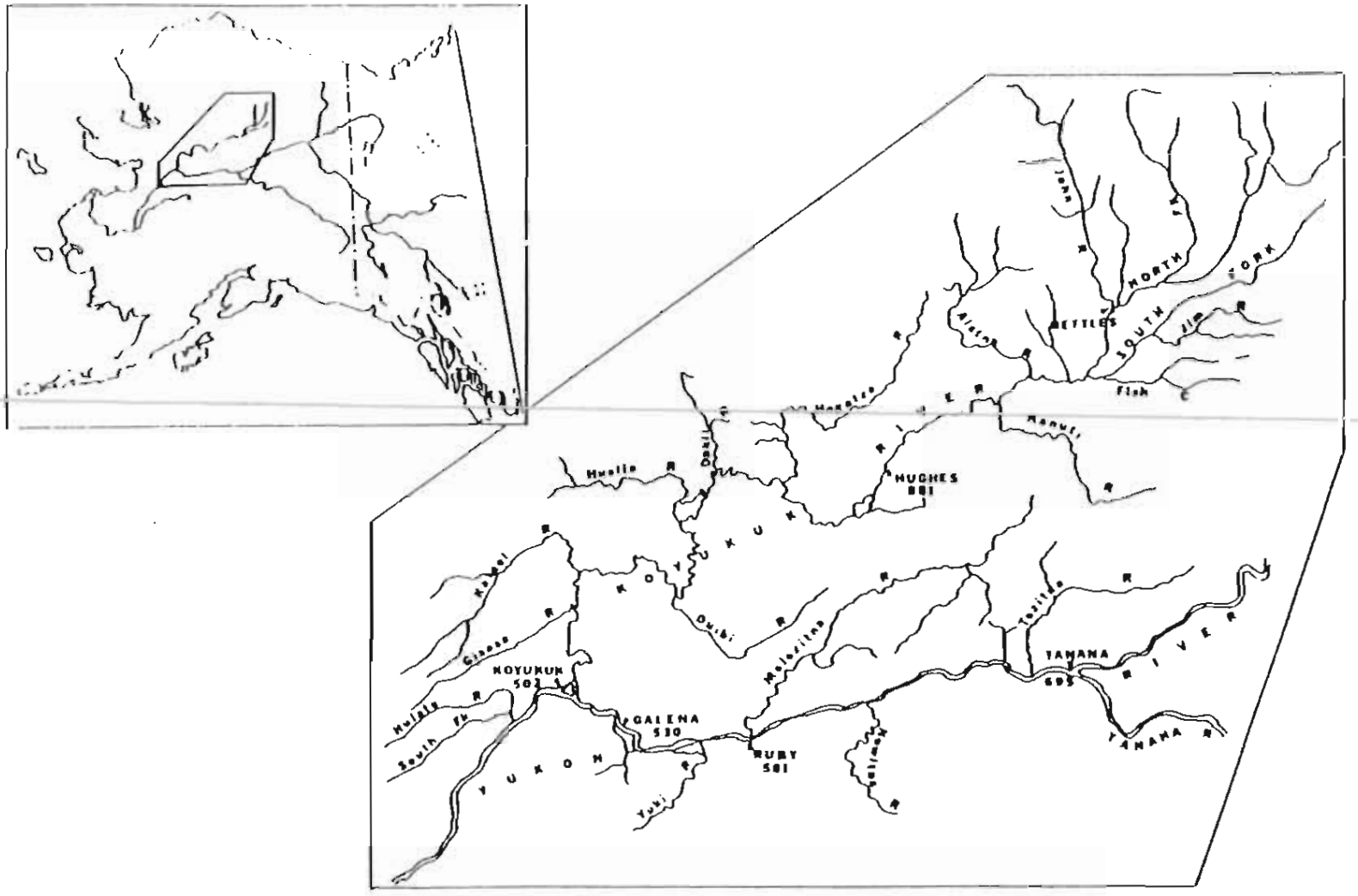

Figure 15. The Koyukuk River drainage.

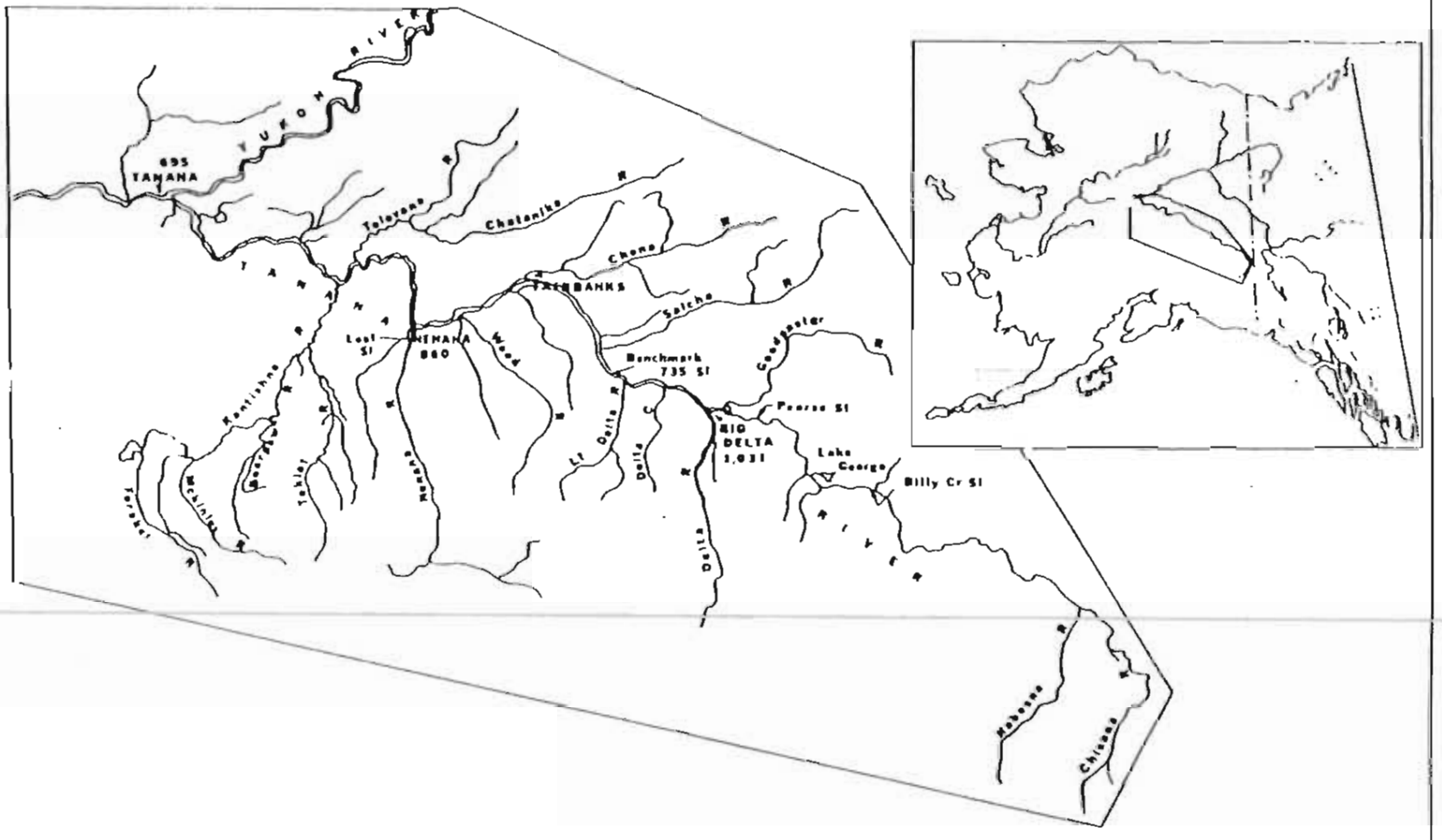

Figure 16. The Tanana River drainage.

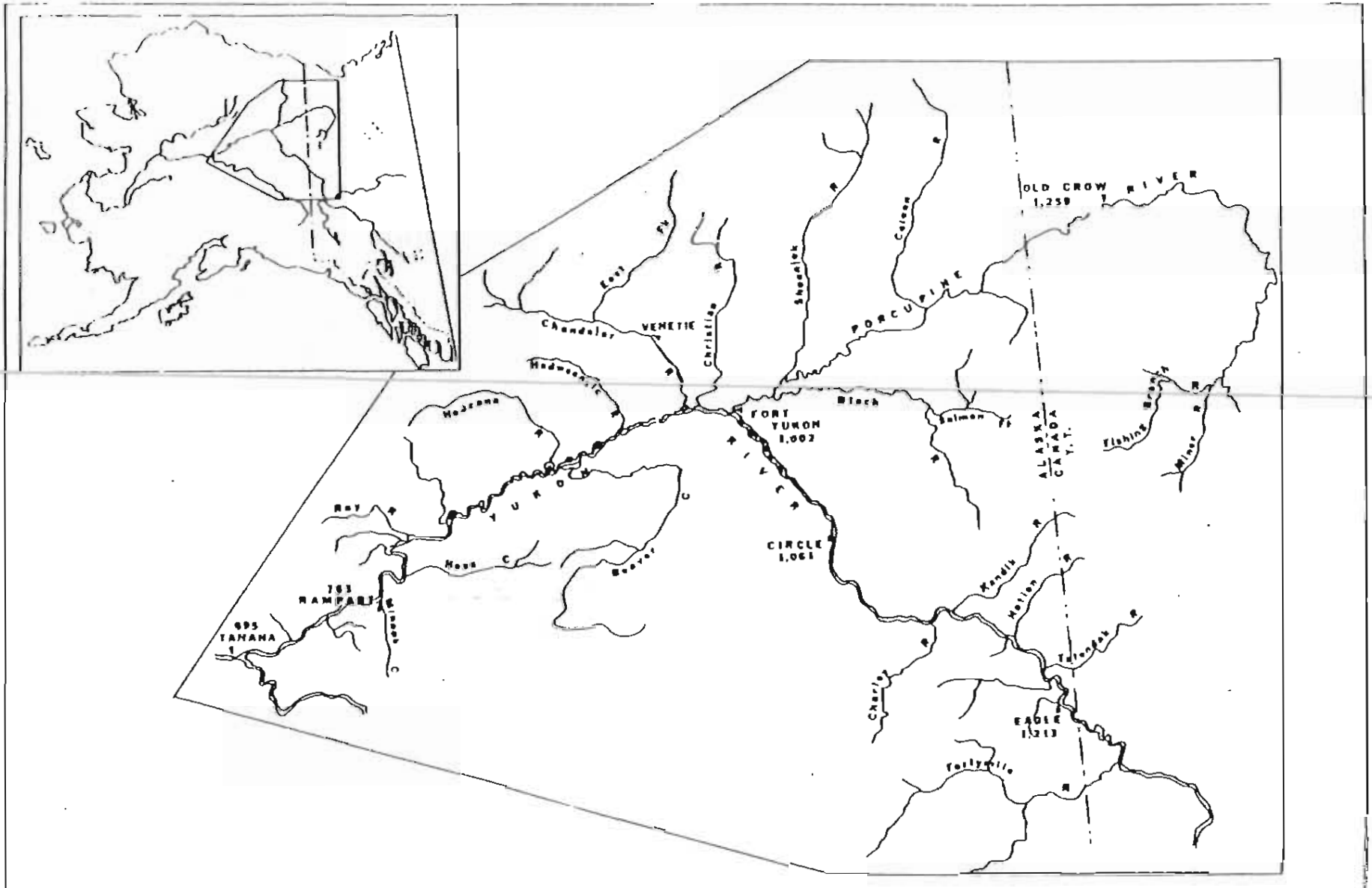

Figure 17. The middle Yukon River and Porcupine River drainage.

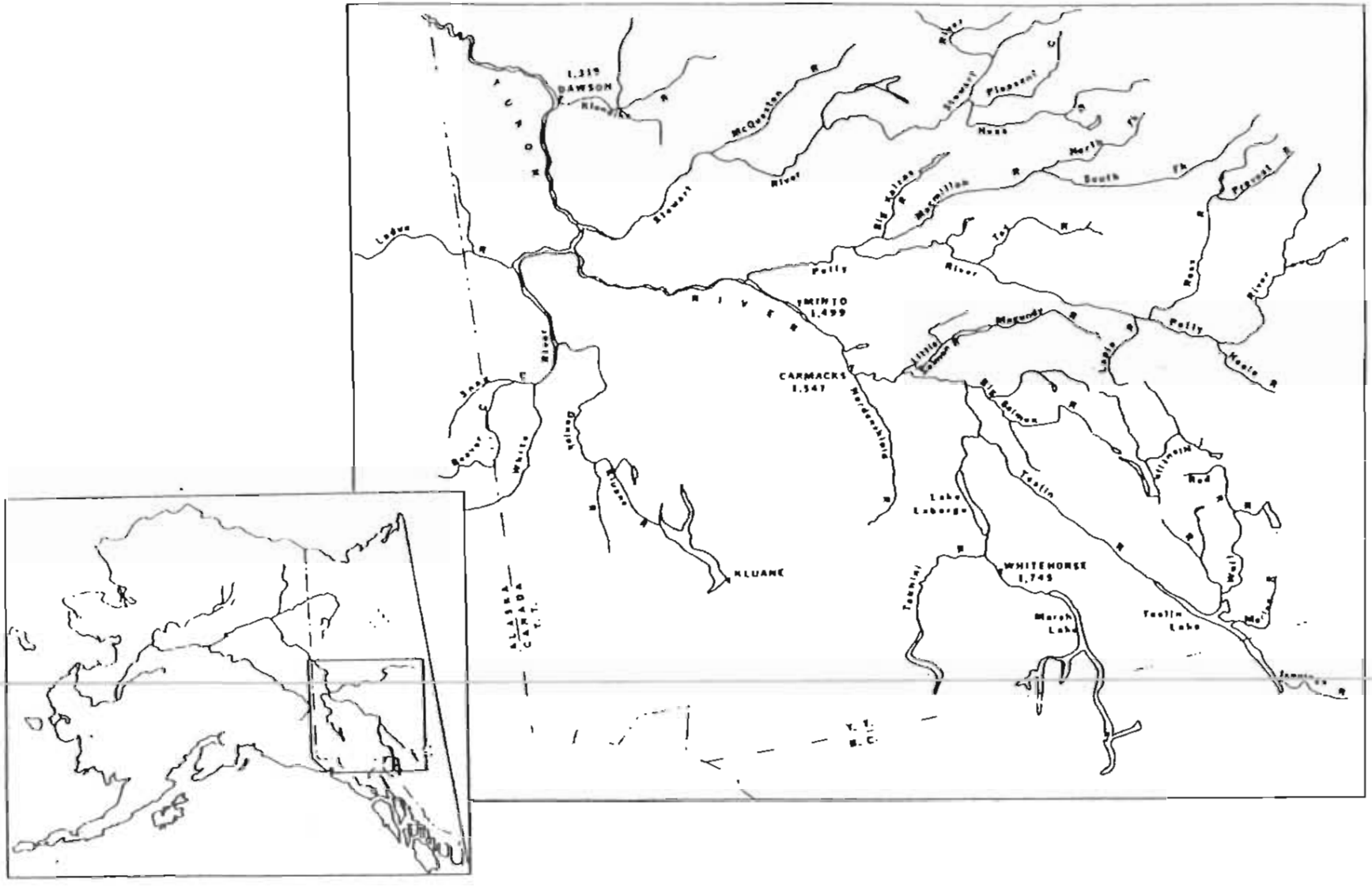

Figure 18. The upper Yukon River drainage.

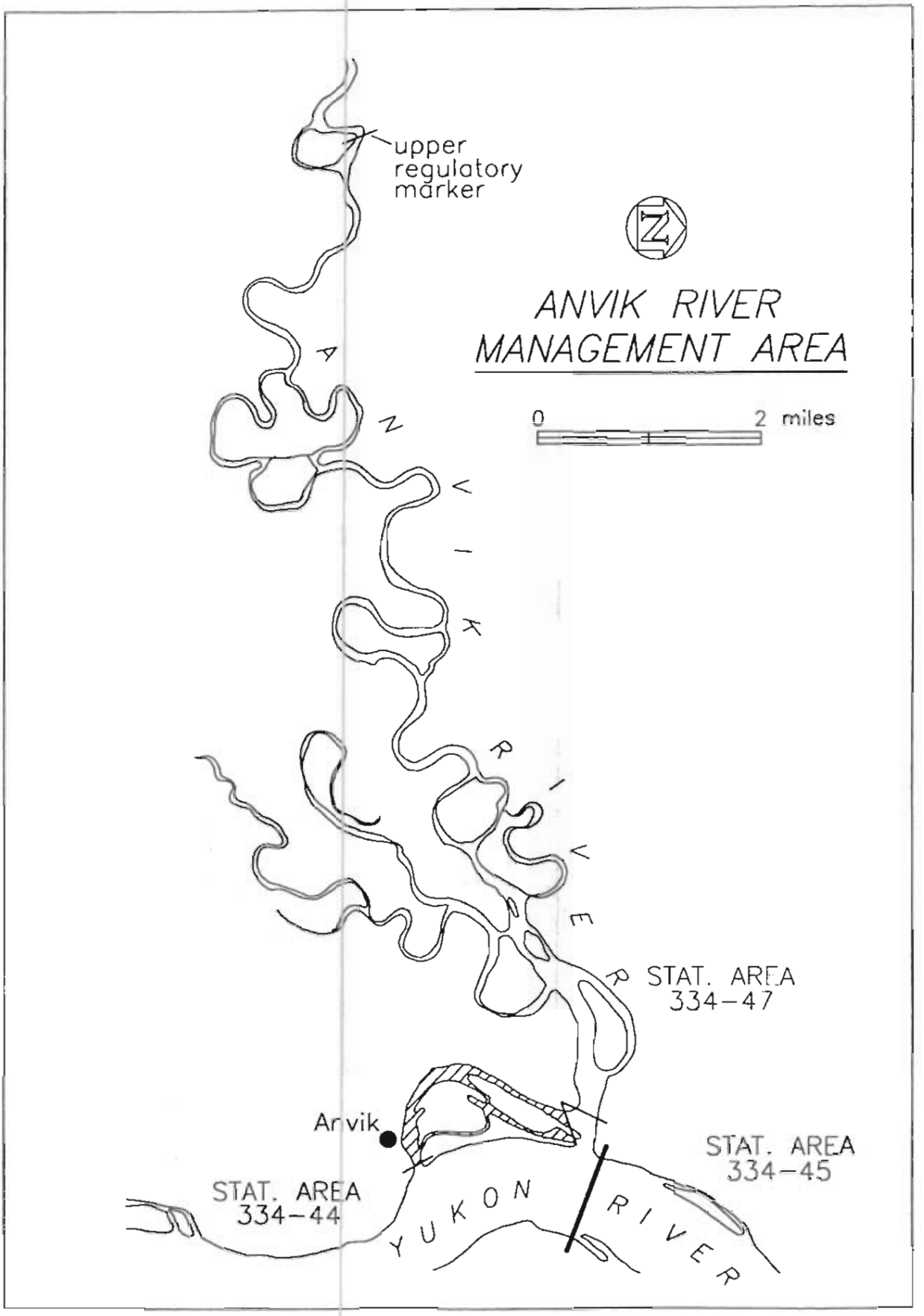

Figure 19. Anvik River Management Area.

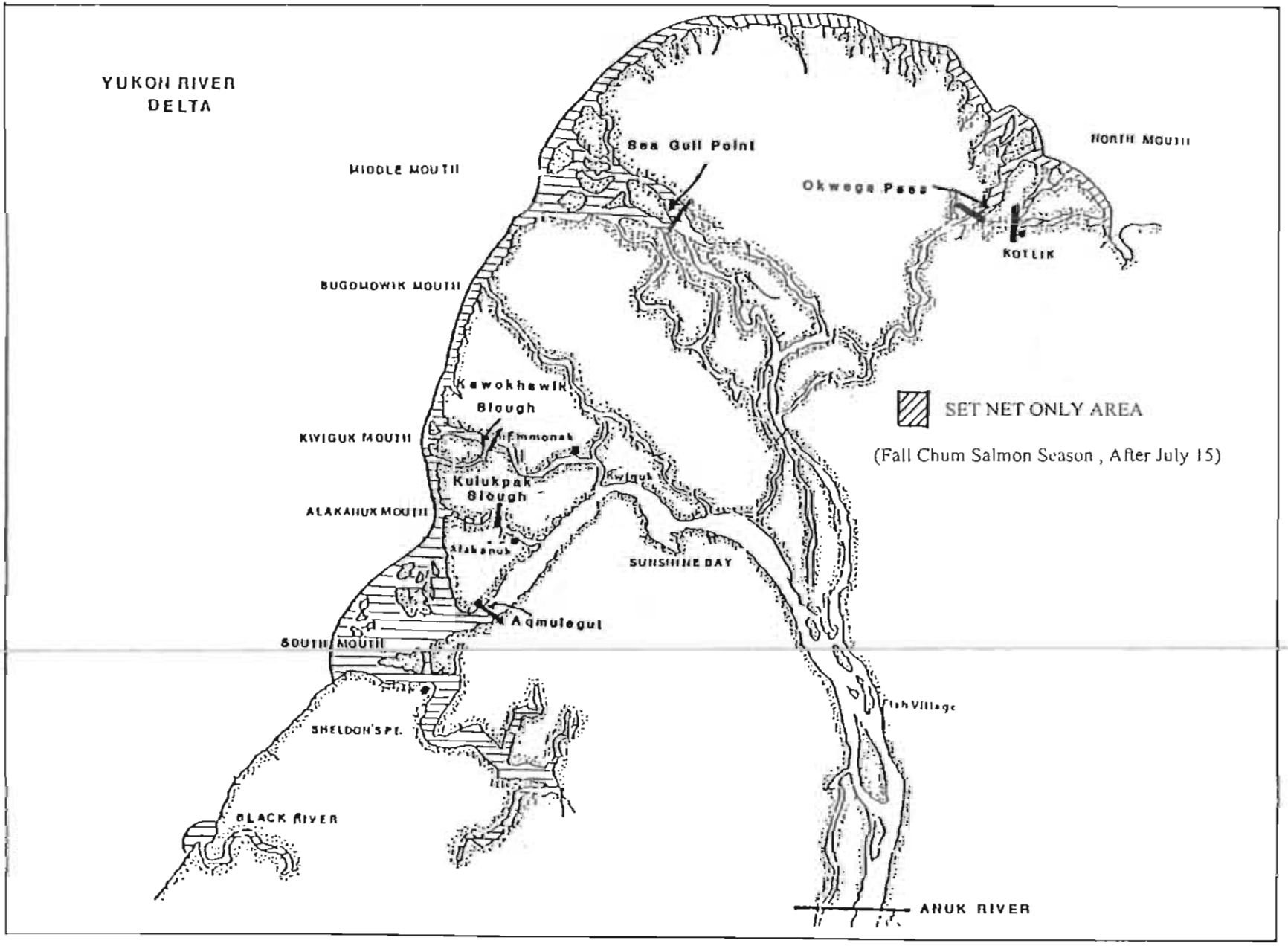

Figure 20. Set Net Only area of District 1, lower Yukon area.

APPENDIX A

YUKON RIVER DRAINAGE WIDE SALMON

Appendix A.1. List of indigenous fishes found in the Yukon Area.[a]

Species Code[b]	Scientific Name	Common Name
601	*Lampetra japonica*	Arctic Lamprey
570	*Stenodus leucichthys*	Inconnu(Sheefish)
588	*Coregonus nasus*	Broad Whitefish
589	*Coregonus pidschian*	Humpback Whitefish
583	*Coregonus sardinella*	Least Cisco
585	*Coregonus laurettae*	Bering Cisco
586	*Prosopium cylindraceum*	Round Whitefish
587	*Prosopium coulteri*	Pygmy Whitefish
610	*Thymallus arcticus*	Arctic Grayling
550	*Salvelinus namaycush*	Lake Trout
520	*Salvelinus alpinus*	Arctic Char
530	*Salvelinus malma*	Dolly Varden
410	*Oncorhynchus tshawytscha*	Chinook Salmon
420	*Oncorhynchus nerka*	Sockeye Salmon
430	*Oncorhynchus kisutch*	Coho Salmon
440	*Oncorhynchus gorbuscha*	Pink Salmon
450	*Oncorhynchus keta*	Chum Salmon
513	*Osmerus mordax*	Rainbow Smelt
514	*Hypomesus olidus*	Pond Smelt
500	*Esox lucius*	Northern Pike
630	*Dallia pectoralis*	Alaska Blackfish
650	*Couesius plumbeus*	Lake Chub
640	*Catostomus catostomus*	Longnose Sucker
670	*Percopsis omiscomaycus*	Trout Perch
590	*Lota lota*	Burbot(lush)
661	*Pungitius pungitius*	Ninespine Stickleback
162	*Cottus cognatus*	Slimy Sculpin
ESTUARINE		
113	*Elegimus gracilis*	Saffron Cod
122	*Liopsetta glacialis*	Arctic Flounder
127	*Limanda aspera*	Yellowfin Sole
129	*Platichthys stellatus*	Starry Flounder
192	*Hexagrammos stelleri*	Whitespotted Greenling
230	*Clupea harengus pallas*	Pacific Herring
516	*Mallotus villosus*	Capelin
NA	*Megalocottus platycephalus*	Sculpin

[a] Includes fishes found in the Yukon River drainage in Canada.

[b] The species code is a three-digit number that identifies the type of fish caught on harvest fish tickets.

Appendix A.2. Yukon River drainage mileages.

Location	Mileage from Mouth
NORTH MOUTH (APOON PASS)	
Kotlik	6
Hamilton	26
MIDDLE MOUTH (KWIKPAK,KAWANAK PASS)	
Choolunawick	16
Akers Camp	26
New Hamilton	34
SOUTH MOUTH (KWIKLUAK PASS)	
Mouth, Black River	-18
Flat Island	0
Sheldon Point	5
Tin Can Point	8
Alakanuk	17
Emmonak-Kwiguk (Kwiguk Pass)	24
Sunshine Bay	24
Aproka Pass (upstream mouth)	35
Kwikpak Pass (upstream mouth)	44
Head of Passes	48
Fish Village	52
Mouth, Anuk River	63
(District 1/2 Boundary)	
Patsys Cabin	71
Mountain Village	87
Old Andreafsky	97
Pitkas Point	103
Mouth, Andreafsky River	104
St. Marys	107
Pilot Station	122
Mouth, Atcheulinguk (Chulinak) River	126
Pilot Village	138
Marshall (Fortuna Ledge)	161
Upstream Mouth Owl Slough	163
Ingrihak	170
Ohogamuit	185
Toklik	191
(District 2/3 Boundary)	
Kakamut	193
Russian Mission	213
Dogfish Village	227
Pairnuit	251
Mouth, Innoko River (South Slough)	274
Shageluk	328
Holikachuk	383
Holy Cross	279
Mouth, Koserefski River	286
Old Paradise Village	301
(District 3/4 Boundary)	
Mouth, Bonasila River	306
Anvik	317
Mouth, Anvik River	318
Grayling	336
Mouth, Thompson Creek	349
Blackburn	370
Eagle Slide	402
Mouth, Rodo River	447
Kaltag	450
Mouth, Nulato River	483
Nulato	484
Koyukuk	502
Mouth, Koyukuk River	508
Mouth, Gisasa River	564
Huslia	711
Mouth, Dakli River	755
Mouth, Hogatza River	780
Hughes	881
Mouth, Kanuti River	935
Alatna (Mouth, Alatna R.)	956
Allakaket	956
Mouth, South Fork	986
Mouth, John River	1,117
Bettles	1,121
Middle Fork	1,141
Cold Foot	1,174
Wiseman	1,186
Bishop Rock	514
Prospect Point	519
Galena	530
Whiskey Creek	555
Mouth, Yuki River	562
Ruby	581
Mouth, Melozitna River	583
Horner Hot Springs	605
Kokrines	608
Mouth, Nowitna River	612
Birches	647
Kallands-Mouth of Illinois Creek	664
(District 4/5 Boundary)	
Mouth, Tozitna River	681
Tanana Village	695
Mouth, Tanana River	695
(District 5/6 Boundary)	
Manley Hot Springs	765
Mouth, Kantishna River	793
Mouth, Toklat River	838
Mouth, Sushana R.	850
Mouth, Bearpaw River	887
Outlet, L. Minchumina	959
Minto	835
Nenana	860
Mouth, Nenana River	860
Mouth, Wood River	894
Rosie Creek Bluffs	912
Mouth, Chena R.(Fairbanks)	920
Mouth, Salcha River	965

Location	Mileage from Mouth
Benchmark #735 Slough	991
Mouth, Little Delta R.	1,000
Mouth, Delta Creek	1,014
Mouth, Clear Creek (Richardson-Clearwater)	1,015
Mouth, Shaw Creek	1,021
Mouth, Delta River (Big Delta)	1,031
Delta Junction	1,041
Mouth, Goodpaster River	1,049
Bluff Cabin Slough	1,050
Outlet, Clearwater Lake	1,052
Outlet, Clearwater Crk (Delta Clearwater)	1,053
Mouth, Gerstle River	1,059
Outlet, Healy Lake	1,071
Outlet, Lake George	1,086
Tanacross	1,128
Outlet, Tetlin Lake	1,188
Mouth, Nabesna River	1,210
Northway Junction	1,214
Mouth, Chisana River	1,215
Mouth, Sheep Creek	1,297
Rampart Rapids	731
Rampart	763
Mouth, Hess Creek	789
Mouth, Ray River	817
Highway Bridge - Pipeline Crossing	820
Mouth, Dall River	841
Stevens Village	847
Mouth, Hodzana River	897
Beaver	932
Mouth Hadweenzic River	952
Mouth, Chandalar River (Venetie Landing)	982
Venetie	1,025
Fort Yukon	1,002
Mouth, Porcupine River	1,002
Mouth, Black River	1,026
Chalkyitsik	1,084
Mouth, Salmon Fork R.	1,142
Mouth, Sheenjek River	1,054
Mouth, Coleen River	1,157
Mouth, Salmon Trout R.	1,193
U.S. - Canadian Border	1,219
Old Crow	1,259
Fishing Branch R. spawning area	1,600
Circle	1,061
Woodchopper	1,110
Mouth, Charley River	1,124
Mouth, Kandik River	1,135
Mouth, Nation River	1,166
Mouth, Tatonduk River	1,186
Mouth, Seventymile River	1,194
Eagle	1,213
U.S.-Canadian border	1,224
Mouth, Fortymile River	1,269
Dawson	1,319
Mouth, Klondike River	1,320
Mouth, Sixty Mile River	1,369
Mouth, Stewart River	1,375
McQuesten	1,455
Stewart Crossing	1,491
Mayo	1,520
Mouth, Hess River	1,594
Mouth, White River	1,386
Mouth, Donjek River	1,455
Mouth Kluane River	1,541
Outlet Kluane L.	1,587
Burwash Landing	1,595
Kluane	1,625
Fort Selkirk	1,477
Mouth, Pelly River	1,478
Pelly Crossing	1,410
Mouth, MacMillan River	1,442
Ross River	1,602
Minto	1,499
Mouth Tatchun Creek	1,530
Carmacks	1,547
Mouth, Little Salmon River	1,583
Mouth, Big Salmon River	1,621
Mouth, N. Big Salmon R.	1,641
Mouth, S. Big Salmon R.	1,657
Outlet, Big Salmon Lake	1,714
Mouth, Teslin River	1,654
Roaring Bull Rapids	1,707
Johnson's Crossing (Outlet, Teslin L.)	1,756
Teslin	1,780
Mouth Nisutlin River	1,788
Mouth, Sidney Creek	1,837
Mouth, Hundred Mi. Creek	1,851
Mouth, McNeil River	1,887
Outlet, Nisutlin Lake	1,892
Outlet, Lake Laberge	1,679
Inlet, Lake Laberge	1,712
Mouth, Takhini River	1,718
Whitehorse	1,745
Outlet, Marsh Lake	1,764
Mouth, M'Clintock River	1,769
Outlet, Little Atlin L.	1,788
Outlet, Atlin Lake	1,812
Atlin	1,844
Tagish	1,786
Outlet, Tagish Lake	1,788
Carcross (Outlet L. Bennett)	1,810
Bennett	1,835

Appendix A.3. Alaskan and Canadian total utilization of Yukon River salmon, 1903-1996.

	Alaska [a, b]			Canada [c]			Total		
Year	Chinook	Other Salmon	Total	Chinook	Other Salmon	Total	Chinook	Other Salmon	Total
1903						4,666			4,666
1904									
1905									
1906									
1907									
1908						7,000			7,000
1909						9,238			9,238
1910									
1911									
1912									
1913						12,133			12,133
1914						12,573			12,573
1915						10,466			10,466
1916						9,566			9,566
1917									
1918	12,239	1,500,065	1,512,304			7,066	12,239	1,500,065	1,519,370
1919	104,822	738,790	843,612			1,800	104,822	738,790	845,412
1920	78,467	1,015,655	1,094,122			12,000	78,467	1,015,655	1,106,122
1921	69,646	112,098	181,744			10,840	69,646	112,098	192,584
1922	31,825	330,000	361,825			2,420	31,825	330,000	364,245
1923	30,893	435,000	465,893			1,833	30,893	435,000	467,726
1924	27,375	1,130,000	1,157,375			4,560	27,375	1,130,000	1,161,935
1925	15,000	259,000	274,000			3,900	15,000	259,000	277,900
1926	20,500	555,000	575,500			4,373	20,500	555,000	579,873
1927		520,000	520,000			5,366		520,000	525,366
1928		670,000	670,000			5,733		670,000	675,733
1929		537,000	537,000			5,226		537,000	542,226
1930		633,000	633,000			3,660		633,000	636,660
1931	26,693	565,000	591,693			3,473	26,693	565,000	595,166
1932	27,899	1,092,000	1,119,899			4,200	27,899	1,092,000	1,124,099
1933	28,779	603,000	631,779			3,333	28,779	603,000	635,112
1934	23,365	474,000	497,365			2,000	23,365	474,000	499,365
1935	27,665	537,000	564,665			3,466	27,665	537,000	568,131
1936	43,713	560,000	603,713			3,400	43,713	560,000	607,113
1937	12,154	346,000	358,154			3,746	12,154	346,000	361,900
1938	32,971	340,450	373,421			860	32,971	340,450	374,281
1939	28,037	327,650	355,687			720	28,037	327,650	356,407
1940	32,453	1,029,000	1,061,453			1,153	32,453	1,029,000	1,062,606
1941	47,608	438,000	485,608			2,806	47,608	438,000	488,414
1942	22,487	197,000	219,487			713	22,487	197,000	220,200
1943	27,650	200,000	227,650			609	27,650	200,000	228,259
1944	14,232		14,232			986	14,232		15,218
1945	19,727		19,727			1,333	19,727		21,060
1946	22,782		22,782			353	22,782		23,135
1947	54,026		54,026			120	54,026		54,146
1948	33,842		33,842				33,842		33,842
1949	36,379		36,379				36,379		36,379
1950	41,808		41,808				41,808		41,808
1951	56,278		56,278				56,278		56,278
1952	38,637	10,868	49,505				38,637	10,868	49,505
1953	58,859	385,977	444,836				58,859	385,977	444,836
1954	64,545	14,375	78,920				64,545	14,375	78,920
1955	55,925		55,925				55,925		55,925
1956	62,208	10,743	72,951				62,208	10,743	72,951
1957	63,623		63,623				63,623		63,623
1958	75,625	337,500	413,125	11,000	1,500	12,500	86,625	339,000	425,625
1959	78,370		78,370	8,434	3,098	11,532	86,804	3,098	89,902
1960	67,597		67,597	9,653	15,608	25,261	77,250	15,608	92,858

-Continued-

Appendix A.3. (p. 2 of 2)

	Alaska [a, b]			Canada [c]			Total		
Year	Chinook	Other Salmon	Total	Chinook	Other Salmon	Total	Chinook	Other Salmon	Total
1961	141,152	461,597	602,749	13,246	9,076	22,322	154,398	470,673	625,071
1962	105,844	434,663	540,507	13,937	9,436	23,373	119,781	444,099	563,880
1963	141,910	429,396	571,306	10,077	27,696	37,773	151,987	457,092	609,079
1964	109,818	504,420	614,238	7,408	12,187	19,595	117,226	516,607	633,833
1965	134,706	484,587	619,293	5,380	11,789	17,169	140,086	496,376	636,462
1966	104,887	309,502	414,389	4,452	13,192	17,644	109,339	322,694	432,033
1967	146,104	352,397	498,501	5,150	16,961	22,111	151,254	369,358	520,612
1968	118,632	270,818	389,450	5,042	11,633	16,675	123,674	282,451	406,125
1969	105,027	424,399	529,426	2,624	7,776	10,400	107,651	432,175	539,826
1970	93,019	585,760	678,779	4,663	3,711	8,374	97,682	589,471	687,153
1971	136,191	547,448	683,639	6,447	16,911	23,358	142,638	564,359	706,997
1972	113,098	461,617	574,715	5,729	7,532	13,261	118,827	469,149	587,976
1973	99,670	779,158	878,828	4,522	10,135	14,657	104,192	789,293	893,485
1974	118,053	1,229,678	1,347,731	5,631	11,646	17,277	123,684	1,241,324	1,365,008
1975	76,883	1,307,037	1,383,920	6,000	20,600	26,600	82,883	1,327,637	1,410,520
1976	105,582	1,026,908	1,132,490	5,025	5,200	10,225	110,607	1,032,108	1,142,715
1977	114,494	1,090,758	1,205,252	7,527	12,479	20,006	122,021	1,103,237	1,225,258
1978	129,988	1,615,312	1,745,300	5,881	9,566	15,447	135,869	1,624,878	1,760,747
1979	159,232	1,596,133	1,755,365	10,375	22,084	32,459	169,607	1,618,217	1,787,824
1980	197,665	1,730,960	1,928,625	22,846	23,718 [d]	46,564	220,511	1,754,678	1,975,189
1981	188,477	2,097,871	2,286,348	18,109	22,781 [d]	40,890	206,586	2,120,652	2,327,238
1982	152,808	1,265,457	1,418,265	17,208	16,091 [d]	33,299	170,016	1,281,548	1,451,564
1983	198,436	1,678,597	1,877,033	18,952	29,490 [d]	48,442	217,388	1,708,087	1,925,475
1984	162,683	1,548,101	1,710,784	16,795	29,767 [d]	46,562	179,478	1,577,868	1,757,346
1985	187,327	1,657,984	1,845,311	19,301	41,515 [d]	60,816	206,628	1,699,499	1,906,127
1986	146,004	1,758,825	1,904,829	20,364	14,843 [d]	35,207	166,368	1,773,668	1,940,036
1987	188,386	1,246,176	1,434,562	17,614	44,786 [d]	62,400	206,000	1,290,962	1,496,962
1988	148,421	2,311,196	2,459,617	21,427	33,915 [d]	55,342	169,848	2,345,111	2,514,959
1989	157,606	2,281,566	2,439,172	17,944	23,490 [d]	41,434	175,550	2,305,056	2,480,606
1990	149,433	1,053,351	1,202,784	19,238	34,302 [d]	53,540	167,114	1,059,943	1,227,057
1991	154,651	1,335,111	1,489,762	20,607	35,653 [d]	56,260	175,258	1,370,764	1,546,022
1992	168,191	863,575	1,031,766	17,903	21,310 [d]	39,213	186,094	884,885	1,070,979
1993	163,078	342,197	505,275	16,611	14,150 [d]	30,761	179,689	356,347	536,036
1994	172,315	577,233	749,548	21,218	38,342 [d]	59,560	193,533	615,575	809,108
1995	177,663	1,437,837	1,615,500	20,887	46,109 [d]	66,996	198,550	1,483,946	1,682,496
1996	138,562	1,121,181	1,259,743	19,672	24,395 [d]	44,067	158,234	1,145,576	1,303,810

[a] Catch in number of salmon. Includes estimated number of salmon harvested for the commercial production of roe.

[b] Commercial and subsistence harvest, and ADF&G test fishery sales combined in numbers of fish, including "equival (typically 1 lb of roe per female) converted from roe sales. See ADF&G 1985 Yukon Area Annual Management Report for data sources and methods of catch estimation used for some years.

[c] Commercial, Aboriginal Fishery, Domestic, and sport catches combined.

[d] Includes the Old Crow Aboriginal fishery harvest of coho salmon.

Appendix A.4. Commercial chinook salmon sales and estimated harvest by area, district, and country, Yukon River drainage, 1961-1996

	Lower Yukon Area [b]				Upper Yukon Area [a]													
					District 4			District 5			District 6			Subtotal			Total		
Year	District 1	District 2	District 3	Subtotal	Number	Roe	Estimated Harvest [c]	Number	Roe	Estimated Harvest [c]	Number	Roe	Estimated Harvest [c]	Number	Roe	Estimated Harvest [c]	Estimated Harvest [c]	Canada Total	Grand Total
1961	84,466	29,026	4,368	117,860	-	-	-	-	-	-	-	-	-	1,804	-	1,804	119,664	3,446	123,110
1962	87,099	22,224	4,687	94,010	-	-	-	-	-	-	-	-	-	724	-	724	94,734	4,037	98,771
1963	85,004	24,221	7,020	116,245	-	-	-	-	-	-	-	-	-	803	-	803	117,048	2,283	119,331
1964	67,555	20,246	4,705	92,506	-	-	-	-	-	-	-	-	-	1,081	-	1,081	93,587	3,208	96,795
1965	89,268	23,763	3,204	116,235	-	-	-	-	-	-	-	-	-	1,863	-	1,863	118,098	2,265	120,363
1966	70,788	16,927	3,612	91,327	-	-	-	-	-	-	-	-	-	1,988	-	1,988	93,315	1,942	95,257
1967	104,350	20,239	3,618	128,207	-	-	-	-	-	-	-	-	-	1,449	-	1,449	129,656	2,187	131,843
1968	79,465	21,392	4,543	105,400	-	-	-	-	-	-	-	-	-	1,126	-	1,126	106,526	2,212	108,738
1969	71,688	14,756	3,595	90,039	-	-	-	-	-	-	-	-	-	988	-	988	91,027	1,640	92,667
1970	56,848	17,141	3,705	77,494	-	-	-	-	-	-	-	-	-	1,651	-	1,651	79,145	2,611	81,756
1971	86,042	19,226	3,490	108,758	-	-	-	-	-	-	-	-	-	1,749	-	1,749	110,507	3,178	113,685
1972	70,052	17,855	3,841	91,748	-	-	-	-	-	-	-	-	-	1,092	-	1,092	92,840	1,769	94,609
1973	56,961	13,859	3,204	74,044	-	-	-	-	-	-	-	-	-	1,309	-	1,309	75,353	2,199	77,552
1974 [d]	71,840	17,948	3,480	93,268	685	-	685	2,663	-	2,663	1,473	-	1,473	4,821	-	4,821	98,089	1,808	99,897
1975	44,585	11,315	5,127	60,077	382	-	382	2,672	-	2,672	500	-	500	3,761	-	3,761	63,838	3,000	66,838
1976	62,410	16,556	4,148	83,114	409	-	409	3,151	-	3,151	1,102	-	1,102	4,662	-	4,662	87,776	3,500	91,276
1977	69,915	16,722	3,965	90,602	985	-	985	4,162	-	4,162	1,008	-	1,008	6,155	-	6,155	96,757	4,720	101,477
1978	59,006	32,924	2,916	94,846	608	-	608	3,079	-	3,079	635	-	635	4,322	-	4,322	99,168	2,975	102,143
1979	75,007	41,498	5,018	121,523	1,989	-	1,989	3,389	-	3,389	772	-	772	6,150	-	6,150	127,673	6,175	133,848
1980	90,382	50,004	5,240	145,626	1,521	-	1,521	4,891	-	4,891	1,947	-	1,947	8,359	-	8,359	153,985	9,500	163,485
1981	99,506	45,781	4,023	149,310	1,347	-	1,347	6,374	-	6,374	987	-	987	8,708	-	8,708	158,018	8,593	166,611
1982	74,450	39,132	2,609	116,191	1,087	-	1,087	5,385	-	5,385	981	-	981	7,453	-	7,453	123,644	8,640	132,284
1983	95,457	43,229	4,106	142,792	601	-	601	3,606	-	3,606	911	-	911	5,118	-	5,118	147,910	13,027	160,937
1984	74,671	36,697	3,039	114,407	961	-	961	3,669	-	3,669	867	-	867	5,497	-	5,497	119,904	9,885	129,789
1985	90,011	48,365	2,588	140,964	664	-	664	3,418	-	3,418	1,142	-	1,142	5,224	-	5,224	146,188	12,573	158,761
1986	53,035	41,849	901	95,785	502	-	502	2,733	-	2,733	950	-	950	4,185	-	4,185	99,970	10,797	110,767
1987 [f]	76,643	47,458	2,039	126,140	1,524	-	1,524	3,758	-	3,758	3,338	-	3,338	8,620	-	8,620	134,760	10,864	145,624
1988 [g]	56,120	35,120	1,767	93,007	3,159	-	3,159	3,436	-	3,436	762	-	762	7,357	-	7,357	100,364	13,217	113,581
1989	61,570 [h]	33,166	1,645	96,381	2,790	-	2,790	3,286	-	3,286	1,741	-	1,741	7,817	-	7,817	104,198	9,789	113,987
1990	51,199 [i]	33,061	2,341	86,601	3,536	8	3,538	3,353	47	3,365	1,757	1,676	2,158	8,646	1,731	9,059	95,660	11,324	106,984
1991 [k]	56,332	39,260	2,344	97,936	2,446	2,222	3,582	3,810	62	3,828	686	1,545	1,072	6,942	3,829	8,480	106,416	10,906	117,322
1992	74,212	38,139	1,819	114,170	1,651	2,273	2,394	3,852	7	3,855	572	884	753	6,075	3,164	7,002	121,172	10,877	132,049
1993	49,286	37,293	1,501	88,080	1,349	701	1,577	3,008	0	3,008	1,113	1,313	1,445	5,470	2,014	6,030	94,110	10,350	104,460
1994	62,241	41,692	1,114	105,047	2,216	564	2,443	3,739	10	3,744	2,135	1,820	2,606	8,090	2,394	8,793	113,840	12,028	125,868
1995	76,106	41,458	0	117,564	262	626	499	3,242	0	3,242	1,660	4,731	2,747	5,164	5,357	6,488	124,052	11,146	135,198
1996	56,642	30,209	0	86,851	45	202	137	2,497	518	2,757	278	750	447	2,820	1,470	3,341	90,192	10,164	100,356
5 Yr Ave. 1986-1990	59,713	38,131	1,739	99,583	2,302	-	2,303	3,313	-	3,316	1,710	-	1,789	7,325	-	7,408	106,990	11,198	118,189
5 Yr Ave. 1991-1995	63,635	39,568	1,356	104,559	1,585	1,277	2,099	3,530	16	3,535	1,233	2,059	1,725	6,348	3,352	7,359	111,918	11,061	122,979

[a] Harvest reported in numbers of fish sold in the round and pounds of roe sold. Since 1990, efforts were made to separate chinook roe from summer chum roe. Does not include department test fish sales.

[b] All fish sold in the round. Includes department test fish sales prior to 1988.

[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold.

[d] In 1974, District 4 was subdivided to include Districts 5 and 6.

[f] Includes the illegal sales of 653 chinook salmon in District 5, and 2,136 chinook salmon in District 6.

[g] Includes the illegal sales of 3,211 chinook salmon.

[h] Includes the illegal sales of 1,101 chinook salmon.

[i] Includes the illegal sales of 2,711 chinook salmon in District 1, and 284 chinook salmon in District 2.

[k] Includes the illegal sales of 1,218 chinook salmon in District 1, and 207 chinook salmon in District 2.

Appendix A.5. Commercial summer chum salmon sales and estimated harvest by area and district, Yukon River drainage in Alaska, 1967-1996.

	Lower Yukon Area							
			District 3 [a]			Subtotal		
Year	District 1 [b]	District 2 [b]	Number	Roe	Estimated Harvest [c]	Number	Roe	Estimated Harvest [c]
1967	9,453	1,425	57			10,935	-	10,935
1968	12,995	1,407	68			14,470	-	14,470
1969	56,886	5,080	-			61,966	-	61,966
1970	117,357	19,649	-			137,006	-	137,006
1971	93,928	6,112	50			100,090	-	100,090
1972	114,234	20,907	527			135,668	-	135,668
1973	221,644	63,402	463			285,509	-	285,509
1974 [d]	466,004	74,152	1,721			541,877	-	541,877
1975	418,323	99,139	-			517,462	-	517,462
1976	273,204	99,190	9,802			382,196	-	382,196
1977	250,652	105,679	3,412			359,743	-	359,743
1978	393,785	227,548	27,003			648,336	-	648,336
1979	369,934	172,838	40,015			582,787	-	582,787
1980	391,252	308,704	44,782			744,738	-	744,738
1981	507,158	351,878	54,471			913,507	-	913,507
1982	249,516	182,344	4,086			435,946	-	435,946
1983	451,164	248,092	14,600			713,856	-	713,856
1984	292,676	236,931	1,087			530,694	-	530,694
1985	247,486	188,099	1,792			437,377	-	437,377
1986	381,127	288,427	442			669,996	-	669,996
1987	222,898	174,876	3,501			401,275	-	401,275
1988	645,322	424,461	13,965			1,083,748	-	1,083,748
1989	544,373 [f]	343,032	7,578			894,983	-	894,983
1990	146,725	131,755	643			279,123	-	279,123
1991	140,470 [h]	175,149	8,912			324,531	-	324,531
1992 [i]	177,329	147,129	65			324,523	-	324,523
1993	73,659	19,332	463			93,454	-	93,454
1994	42,332	12,369	35			55,236	-	55,236
1995	142,266	83,817	0			226,083	-	226,083
1996	92,506	30,727	0	935	1,534	123,233	935	124,767
5 Yr Ave. 1986-1990	388,089	272,510	5,226	-	-	665,825	-	665,825
5 Yr Ave. 1991-1995	115,211	87,659	1,895	-	-	204,765	-	204,765

-Continued-

Appendix A.5. (page 2 of 2).

Year	Upper Yukon Area [a]															
	District 4			District 5			District 6			Subtotal			Total			Total Estimated Harvest
	Number	Roe	Estimated Harvest [c]	Number	Roe	Estimated Harvest [c]	Number	Roe	Estimated Harvest [c]	Number	Roe	Estimated Harvest [c]	Number	Roe	Estimated Harvest [c]	
1967	-	-	-	-	-	-	-	-	-	0	0	0	10,935	0	10,935	10,935
1968	-	-	-	-	-	-	-	-	-	0	0	0	14,470	0	14,470	14,470
1969	-	-	-	-	-	-	-	-	-	0	0	0	61,966	0	61,966	61,966
1970	-	-	-	-	-	-	-	-	-	0	0	0	137,006	0	137,006	137,006
1971	-	-	-	-	-	-	-	-	-	0	0	0	100,090	0	100,090	100,090
1972	-	-	-	-	-	-	-	-	-	0	0	0	135,668	0	135,668	135,668
1973	-	-	-	-	-	-	-	-	-	0	0	0	285,509	0	285,509	285,509
1974 [d]	27,866	-	27,866	6,831	-	6,831	13,318	-	13,318	48,015	0	48,015	589,892	0	589,892	589,892
1975	165,054	-	165,054	12,997	-	12,997	14,782	-	14,782	192,833	0	192,833	710,295	0	710,295	710,295
1976	211,307	-	211,307	774	-	774	6,617	-	6,617	218,698	0	218,698	600,894	0	600,894	600,894
1977	168,541	-	168,541	1,274	-	1,274	4,317	-	4,317	175,132	0	175,132	534,875	0	534,875	534,875
1978	364,184	16,920	381,104	4,892	605	5,497	34,814	8,236	43,050	403,890	25,761	429,651	1,052,226	25,761	1,077,987	1,077,987
1979	169,430	35,317	204,747	8,608	1,009	9,617	18,491	3,891	22,382	196,529	40,217	236,746	779,316	40,217	819,533	819,533
1980	147,560	135,824	283,384	456	-	456	35,855	3,282	39,137	183,871	139,106	322,977	928,609	139,106	1,067,715	1,067,715
1981	59,718	187,032	330,445	1,236	49	1,285	32,477	1,987	34,464	93,431	189,068	366,194	1,006,938	189,068	1,279,701	1,279,701
1982	3,647	151,281	257,719	213	21	234	21,597	1,517	23,114	25,457	152,819	281,067	461,403	152,819	717,013	717,013
1983	6,672	148,125	255,388	42	1,856	1,898	24,309	18	24,327	31,023	149,999	281,613	744,879	149,999	995,469	995,469
1984	1,009	166,842	278,070	645	47	692	56,249	335	56,584	57,903	167,224	335,346	588,597	167,224	866,040	866,040
1985	12,007	247,085	427,483	700	-	700	66,913	1,540	68,453	79,620	248,625	496,636	516,997	248,625	934,013	934,013
1986	300	269,545	465,535	690	-	690	50,483	2,146	52,629	51,473	271,691	518,854	721,469	271,691	1,188,850	1,188,850
1987	29,991	121,474	209,800	962	44	406	10,610	450	11,060	40,963	121,968	221,266	442,238	121,968	622,541	622,541
1988	24,051	254,526	490,074	722	363	1,085	40,129	1,646	41,775	64,902	256,535	532,934	1,148,650	256,535	1,616,682	1,616,682
1989	18,554	283,305	510,244	154	373	527	42,115 [g]	4,871	46,986	60,823	288,549	557,757	955,806	288,549	1,452,740	1,452,740
1990	12,364	105,723	222,550	11	594	671	11,127 [g]	3,059	14,833	23,502	109,376	238,054	302,625	109,376	517,177	517,177
1991 [f]	6,381	137,232	309,644	4	28	35	18,197	4,716	23,892	24,582	141,976	333,571	349,113	141,976	658,102	658,102
1992 [i]	2,659	110,809	211,396	102	295	430	5,029	1,892	7,228	7,790	112,996	219,054	332,313	112,996	543,577	543,577
1993	27	22,447	42,957	0	0	0	3,041	515	3,705	3,068	22,962	46,662	96,522	22,962	140,116	140,116
1994	3,611	89,717	171,607	229	212	464	21,208	7,828	31,434	25,048	97,757	203,505	80,284	97,757	258,741	258,741
1995	8,873	281,074	554,587	107	188	316	24,711	9,475	37,428	33,691	290,737	592,331	259,774	290,737	818,414	818,414
1996	0	295,190	510,240	0	302	336	22,360	16,332	46,890	22,360	313,824	557,466	145,593	314,759	682,233	682,233
5 Yr Ave. 1986-1990	17,052	206,915	379,641	368	275	676	30,893	2,434	33,457	48,333	209,624	413,773	714,158	209,624	1,079,598	1,079,598
5 Yr Ave. 1991-1995	4,310	128,256	258,038	88	145	249	14,437	4,885	20,737	18,836	133,286	279,025	223,601	133,286	483,790	483,790

[a] Harvest reported in numbers of fish sold in the round and pounds of roe. Roe sales may include some pink and chinook salmon roe. Does not include department test fish sales.

[b] All sales are fish in the round in District 1 and 2. Includes department test fish sales prior to 1988.

[c] The estimated harvest is the fish sold in the round plus the estimated number of females caught to produce the roe sold. In addition, the estimated harvest for Districts 3 and 4 includes the estimated number of unsold males harvested.

[d] In 1974, District 4 was subdivided to include Districts 5 and 6.

[f] Includes the illegal sales of 150 summer chum salmon in District 1.

[g] Does not include 1,233 female summer chum salmon sold in Subdistrict 6-C with roe extracted and roe sold separately. These fish are included in estimated harvest to produce roe sold.

[h] Includes the illegal sales of 1,023 summer chum salmon.

[i] Includes the illegal sales of 31 summer chum salmon in District 1, and 91 summer chum salmon in District 2.

Appendix A.6. Commercial fall chum salmon sales and estimated harvest by area, district, and country, Yukon River drainage, 1961-1996.

	Lower Yukon Area [b]				Upper Yukon Area [a]													
					District 4			District 5			District 6			Subtotal			Total		
Year	District 1	District 2	District 3	Subtotal	Numbers	Roe	Estimated Harvest [c]	Numbers	Roe	Estimated Harvest [c]	Numbers	Roe	Estimated Harvest [c]	Numbers	Roe	Estimated Harvest [c]	Estimated Harvest	Canada Total	Grand Total
1961	42,461	-	-	42,461	-	-	-	-	-	-	-	-	-	0	0	0	42,461	3,276	45,737
1962	53,116	-	-	53,116	-	-	-	-	-	-	-	-	-	0	0	0	53,116	936	54,052
1963	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	2,196	2,196
1964	8,347	-	-	8,347	-	-	-	-	-	-	-	-	-	0	0	0	8,347	1,929	10,276
1965	22,936	-	-	22,936	-	-	-	-	-	-	-	-	-	381	0	381	23,317	2,071	25,388
1966	69,836	-	1,209	71,045	-	-	-	-	-	-	-	-	-	0	0	0	71,045	3,157	74,202
1967	36,451	-	1,823	38,274	-	-	-	-	-	-	-	-	-	0	0	0	38,274	3,343	41,617
1968	49,857	-	3,068	52,925	-	-	-	-	-	-	-	-	-	0	0	0	52,925	453	53,378
1969	128,866	-	1,722	130,588	-	-	-	-	-	-	-	-	-	722	5	722	131,310	2,279	133,589
1970	200,306	4,858	3,285	208,449	-	-	-	-	-	-	-	-	-	1,146	0	1,146	209,595	2,479	212,074
1971	188,533	-	-	188,533	-	-	-	-	-	-	-	-	-	1,061	0	1,061	189,594	1,761	191,355
1972	138,711	12,898	1,313	150,922	-	-	-	-	-	-	-	-	-	1,254	0	1,254	152,176	2,532	154,708
1973	173,783	45,304	-	219,087	-	-	-	-	-	-	-	-	-	13,003	0	13,003	232,090	2,806	234,896
1974 [d]	176,036	53,540	552	230,128	9,213	-	9,213	23,551	-	23,551	26,884	-	26,884	59,648	0	59,648	289,776	2,544	292,320
1975	158,183	51,666	5,590	215,439	13,666	-	13,666	27,212	-	27,212	18,692	-	18,692	59,570	0	59,570	275,009	2,500	277,509
1976	105,851	21,212	4,250	131,313	1,742	-	1,742	5,387	-	5,387	17,948	-	17,948	25,077	0	25,077	156,390	1,000	157,390
1977	131,758	51,994	15,851	199,603	13,980	-	13,980	25,730	-	25,730	18,673	-	18,673	58,383	0	58,383	257,986	3,990	261,976
1978	127,947	51,646	11,527	191,120	10,988	1,721	12,709	21,016	5,220	26,236	13,259	3,687	16,946	45,263	10,628	55,891	247,011	3,356	250,367
1979	109,406	94,042	25,955	229,403	45,899	3,199	52,098	47,459	8,097	55,556	34,185	7,170	41,355	130,543	18,466	149,009	378,412	9,084	387,496
1980	106,829	83,881	13,519	204,229	27,978	4,347	32,325	41,771	605	42,376	19,452	68	19,520	89,201	5,020	94,221	298,450	9,000	307,450
1981	167,834	154,883	19,043	341,760	12,082	1,311	13,393	86,620	6,955	93,575	25,989	3,019	29,008	124,691	11,285	135,976	477,736	15,260	492,996
1982	97,484	96,581	5,815	199,880	3,894	167	4,061	13,593	42	13,635	6,820	596	7,416	24,307	805	25,112	224,992	11,312	236,304
1983	124,371	85,645	10,018	220,034	4,482	1,963	6,445	43,993	0	43,993	34,089	3,101	37,190	82,564	5,064	87,628	307,662	25,990	333,652
1984	78,791	70,803	6,429	155,963	7,625	2,215	9,840	24,060	57	24,117	20,564	56	20,620	52,249	2,328	54,577	210,550	22,932	233,482
1985	129,948	40,490	5,164	175,602	24,452	2,525	26,977	25,338	0	25,338	42,352	0	42,352	92,142	2,525	94,667	270,269	35,746	306,015
1986	59,352	51,307	2,793	113,452	2,045	0	2,045	22,053	395	22,448	1,892	182	2,074	25,990	577	26,567	140,019	11,464	151,483
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40,591	40,591
1988	44,890	31,845	2,090	78,825	15,662	1,421	17,083	16,989	0	16,989	21,844	1,806	23,650	54,495	3,227	57,722	136,547	30,263	166,810
1989	74,235	97,558	15,332	187,125	11,776	3,407	15,183	18,215	3,989	22,204	49,090 [f]	7,353	56,443	79,081	14,749	93,830	280,955	17,549	298,504
1990	25,269	37,077	3,715	66,061	4,989	2,351	8,166	7,778	1,058	8,976	43,182 [f]	7,535	50,975	55,949	10,944	68,117	134,178	27,537	161,715
1991	59,724	102,628	9,213	171,565	3,737	1,616	6,091	27,355	3,625	32,114	28,195	14,154	44,448	59,287	19,395	82,653	254,218	31,404	285,622
1992	0	0	0	0	0	0	0	0	0	0	15,721	2,806	19,022	15,721	2,806	19,022	19,022	18,576	37,598
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7,762	7,762
1994	0	0	0	0	0	0	0	3,630	0	3,630	1	3,276	4,369	3,631	3,276	7,999	7,999	30,035	38,034
1995	79,345	90,831	0	170,176	2,924	4,126	8,731	9,778	18,815	30,033	67,855	9,560	74,117	80,557	32,501	112,881	283,057	39,012	322,069
1996	33,629	29,651	0	63,280	2,918	0	2,918	11,878	8,498	21,859	16,266	8,170	17,074	29,062	16,671	42,550	108,630	20,069	128,699
5 Yr. Ave. 1986-1990	40,749	43,557	4,786	89,093	6,894	1,436	8,495	13,007	1,088	14,122	23,202	3,375	26,628	43,103	5,899	49,247	138,340	25,481	163,821
5 Yr. Ave. 1991-1995	27,814	38,692	1,843	68,348	1,332	1,148	2,964	8,153	4,488	13,155	22,354	5,959	28,391	31,839	11,596	44,511	112,859	25,358	138,217

a Sales reported in numbers of fish sold in the round and pounds of unprocessed roe, which may include small amounts of coho salmon roe. Since 1990, efforts were made to separate coho roe from fall chum roe. Does not include department test fish sales.
b All fish sold in the round. Includes department test fish sales prior to 1988.
c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold.
d In 1974, District 4 was subdivided to include Districts 5 and 6.
f Does not include 884 female fall chum salmon sold in Subdistrict 6-C with roe extracted and roe sold separately. Females are accounted for in the estimated harvest to produce roe sold.

Appendix A.7. Commercial coho salmon sales and estimated harvest by area and district, Yukon River drainage in Alaska, 1961-1996.

	Lower Yukon Area [b]				Upper Yukon Area [a]												Total
					District 4			District 5			District 6			Subtotal			
Year	District 1	District 2	District 3	Subtotal	Number	Roe	Estimated Harvest [c]	Number	Roe	Estimated Harvest [c]	Number	Roe	Estimated Harvest [c]	Number	Roe	Estimated Harvest [c]	Estimated Harvest
1961	2,855	-	-	2,855	-	-	-	-	-	-	-	-	-	-	-	-	2,855
1962	22,926	-	-	22,926	-	-	-	-	-	-	-	-	-	-	-	-	22,926
1963	5,572	-	-	5,572	-	-	-	-	-	-	-	-	-	-	-	-	5,572
1964	2,446	-	-	2,446	-	-	-	-	-	-	-	-	-	-	-	-	2,446
1965	350	-	-	350	-	-	-	-	-	-	-	-	-	-	-	-	350
1966	19,254	-	-	19,254	-	-	-	-	-	-	-	-	-	-	-	-	19,254
1967	9,925	-	1,122	11,047	-	-	-	-	-	-	-	-	-	-	-	-	11,047
1968	13,153	-	150	13,303	-	-	-	-	-	-	-	-	-	-	-	-	13,303
1969	13,989	-	1,009	14,998	-	-	-	-	-	-	-	-	-	-	-	95	15,093
1970	12,632	-	-	12,632	-	-	-	-	-	-	-	-	-	-	-	556	13,188
1971	12,165	-	-	12,165	-	-	-	-	-	-	-	-	-	-	-	38	12,203
1972	21,705	506	-	22,211	-	-	-	-	-	-	-	-	-	-	-	22	22,233
1973	34,860	1,781	-	36,641	-	-	-	-	-	-	-	-	-	-	-	0	36,641
1974 [d]	13,713	176	-	13,889	0	-	0	1,409	-	1,409	1,479	-	1,479	2,888	-	2,888	16,777
1975	2,288	200	-	2,488	0	-	0	5	-	5	53	-	53	58	-	58	2,546
1976	4,064	17	-	4,081	0	-	0	0	-	0	1,103	-	1,103	1,103	-	1,103	5,184
1977	31,720	5,319	538	37,577	0	-	0	2	-	2	1,284	-	1,284	1,286	-	1,286	38,863
1978	16,460	5,835	758	23,053	32	-	32	1	-	1	3,066	-	3,066	3,099	-	3,099	26,152
1979	11,369	2,850	-	14,219	155	-	155	0	-	0	2,791	-	2,791	2,946	-	2,946	17,165
1980	4,829	2,660	-	7,489	30	-	30	0	-	0	1,226	-	1,226	1,256	-	1,256	8,745
1981	13,129	7,848	419	21,396	0	-	0	0	-	0	2,284	-	2,284	2,284	-	2,284	23,680
1982	15,115	14,179	87	29,381	15	-	15	0	-	0	7,780	-	7,780	7,795	-	7,795	37,176
1983	4,595	2,557	-	7,152	0	-	0	0	-	0	6,168	-	6,168	6,168	-	6,168	13,320
1984	29,472	43,064	621	73,157	1,095	-	1,095	0	-	0	7,688	-	7,688	8,783	-	8,783	81,940
1985	27,676	17,125	171	44,972	938	-	938	0	-	0	11,762	-	11,762	12,700	-	12,700	57,672
1986	24,824	21,197	793	46,814	0	-	0	0	-	0	441	-	441	441	-	441	47,255
1987	0	0	0	0	0	-	0	0	-	0	0	-	0	0	-	0	0
1988	36,028	34,758	1,419	72,205	2	-	2	8	-	8	13,972	-	13,972	13,982	-	13,982	86,187
1989	22,987	38,402	3,988	65,377	3	-	3	84	-	84	16,084	-	16,084	16,171	-	16,171	81,548
1990	12,160	16,405	918	29,483	0	-	0	0	-	0	11,549 [f]	4,042	14,804	11,549	4,042	14,804	44,287
1991	54,095	40,898	1,905	96,898	14	0	14	0	0	0	6,268	4,299	9,774	6,282	4,299	9,788	106,686
1992	0	0	0	0	0	0	0	0	0	0	6,556	1,680	7,979	6,556	1,680	7,979	7,979
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	120	5,588	4,451	120	5,588	4,451	4,451
1995	21,625	18,488	0	40,113	0	0	0	0	0	0	5,826	2,229	6,900	5,826	2,229	6,900	47,013
1996	27,705	20,974	0	48,679	161	0	161	0	0	0	3,803	4,829	7,142	3,964	4,829	7,303	55,982
5 Yr Ave. 1986-1990	19,200	22,152	1,424	42,776	1	0	1	18	0	18	8,409	-	9,060	8,429	-	9,080	51,855
5 Yr Ave. 1991-1995	15,144	11,877	381	27,402	3	-	3	0	0	0	3,754	2,759	5,821	3,757	2,759	5,824	33,226

a Sales reported in numbers of fish sold in the round and pounds of roe. Since 1990, efforts were made to seperate coho and fall chum salmon roe Does not include department test fish sales.
b All sales are fish in the round. Includes department test fish sales prior to 1988.
c The estimated harvest is the fish sold in the round plus the estimated number of females caught to produce the roe sold.
d In 1974, District 4 was subdivided to include Districts 5 and 6.
f Does not include 438 female coho salmon sold in District 6-C with roe extracted and roe sold separately. These fish are included in estimated harvest to produce roe sold.

Appendix A.8. Commercial Fisheries Entry Commission (CFEC) salmon permits issued by gear type, Yukon Area, 1976-1996. [a]

Year	Lower Yukon Set or Drift Gillnet		Upper Yukon Set Gillnet		Upper Yukon Fishwheel		Total	
	Permits Issued	Permits Fished	Permits Issued	Permits Fished	Permits Issued	Permits Fished	Permits Issued	Permits Fished
1976	678	[b]	118	[b]	169	[b]	[b]	[b]
1977	700	609	69	44	160	130	929	783
1978	699	650	71	47	158	137	928	834
1979	708	661	70	50	165	129	943	840
1980	709	654	71	52	163	128	943	834
1981	711	666	70	45	162	125	943	836
1982	710	664	76	45	166	111	952	820
1983	708	655	73	40	164	115	945	810
1984	708	674	73	39	159	99	940	812
1985	708	664	71	40	159	113	938	817
1986	707	670	71	30	161	101	939	801
1987	706	656	71	33	161	108	938	797
1988	707	677	71	43	160	124	938	844
1989	707	682	70	42	160	127	937	851
1990	708	675	71	35	157	116	936	826
1991	708	680	72	36	155	110	935	826
1992	707	678	71	32	165	111	943	821
1993	707	682	72	35	166	88	945	805
1994	707	659	72	30	165	73	944	762
1995	707	663	73	36	166	106	946	805
1996	707	628 [c]	72	28 [c]	166	107 [c]	945	763 [c]

[a] Information obtained from CFEC unless otherwise indicated. Includes permanent and interim-use permits.
[b] Information unavailable.
[c] Data source: ADF&G.

Appendix A.9. Number of commercial salmon fishing gear permit holders by district and season, Yukon Area, 1971-1996. [a]

Chinook and Summer Chum Salmon Season

	Lower Yukon Area				Upper Yukon Area				
Year	District 1	District 2	District 3	Subtotal [b]	District 4	District 5	District 6	Subtotal	Total
1971	405	154	33	592	-	-	-	-	592
1972	426	153	35	614	-	-	-	-	614
1973	438	167	38	643	-	-	-	-	643
1974	396	154	42	592	27	31	20	78	670
1975	441	149	37	627	93	52	36	181	808
1976	453	189	42	684	80	46	29	155	839
1977	392	188	46	626	87	41	18	146	772
1978	429	204	22	655	80	45	35	160	815
1979	425	210	22	657	87	34	30	151	808
1980	407	229	21	657	79	35	33	147	804
1981	448	225	23	696	80	43	26	149	845
1982	450	225	21	696	74	44	20	138	834
1983	455	225	20	700	77	34	25	136	836
1984	444	217	20	613	54	31	27	112	725
1985	425	223	18	666	74	32	27	133	799
1986	441	239	7	672	75	21	27	123	795
1987	440	239	13	659	87	30	24	141	800
1988	456	250	22	678	95	28	33	156	834
1989	445	243	16	687	98	32	29	159	846
1990	453	242	15	679	92	27	23	142	821
1991	489	253	27	678	85	32	22	139	817
1992	438	263	19	679	90	28	19	137	816
1993	448	238	6	682	75	30	18	123	805
1994	414	250	7	659	55	28	20	103	762
1995	439	233	0	661	87	28	21	136	797
1996	448	189	9	627	87	23	15	125	752

Fall Chum and Coho Salmon Season

	Lower Yukon Area				Upper Yukon Area				
Year	District 1	District 2	District 3	Subtotal [b]	District 4	District 5	District 6	Subtotal	Total
1971	352	-	-	352	-	-	-	-	352
1972	353	75	3	431	-	-	-	-	431
1973	445	183		628	-	-	-	-	628
1974	322	121	6	449	17	23	22	62	511
1975	428	185	12	625	44	33	33	110	735
1976	422	194	28	644	18	36	44	98	742
1977	337	172	37	546	28	34	32	94	640
1978	429	204	28	661	24	43	30	97	758
1979	458	220	32	710	31	44	37	112	822
1980	395	232	23	650	33	43	26	102	752
1981	462	240	21	723	30	50	30	110	833
1982	445	218	15	678	15	24	25	64	742
1983	312	224	18	554	13	29	23	65	619
1984	327	216	12	536	18	39	26	83	619
1985	345	222	13	559	22	39	25	86	645
1986	282	231	14	510	1	21	16	38	548
1987 [c]	-	-	-	-	-	-	-	-	-
1988	328	233	13	563	20	20	32	72	635
1989	332	229	22	550	20	24	28	72	622
1990	301	227	19	529	11	11	27	49	578
1991	319	238	19	540	8	21	25	54	594
1992 [c]	-	-	-	-	-	-	22	22	22
1993 [c]	-	-	-	-	-	-	-	-	-
1994 [c]	-	-	-	-	-	1	11	12	12
1995	189	172	0	357	4	12	20	36	393
1996	158	109	0	263	1	17	17	35	298

-Continued-

Appendix A.9. (page 2 of 2).

COMBINED SEASON

Year	Lower Yukon Area				Upper Yukon Area				Total
	District 1	District 2	District 3	Subtotal [b]	District 4	District 5	District 6	Subtotal	
1971	473	154	33	660	-	-	-	27	687
1972	476	153	35	664	-	-	-	-	664
1973	529	205	38	772	-	-	-	47	819
1974	485	190	42	717	28	43	27	98	815
1975	491	197	39	727	95	57	46	198	925
1976	482	220	44	746	96	62	56	214	960
1977	402	208	54	609	96	53	39	188	797
1978	472	221	29	650	82	53	38	173	823
1979	461	230	33	661	90	49	40	179	840
1980	432	247	27	654	88	51	38	177	831
1981	507	257	26	666	94	56	31	181	847
1982	455	244	22	664	76	53	27	156	820
1983	458	235	26	655	79	47	31	157	812
1984	453	236	26	676	58	45	33	136	812
1985	434	247	24	666	76	48	33	157	823
1986	444	259	18	672	75	30	27	132	804
1987	440	239	13	659	87	30	24	141	800
1988	460	260	24	683	97	35	38	170	853
1989	452	257	23	687	99	38	32	169	856
1990	459	258	22	679	92	31	30	153	832
1991	497	272	29	680	85	33	28	146	826
1992	438	263	19	679	90	28	25	143	822
1993	448	238	6	682	75	30	18	123	805
1994	414	250	7	659	55	28	20	103	762
1995	446	254	0	664	87	31	24	142	806
1996	455	217	9	628	87	29	19	135	763

[a] Number of permit holders which delivered fish.
[b] 1984-1995 is the unique number of permits fished. Prior year totals are additive for District 1, 2, and 3.
Some individual fishermen in the Lower Yukon Area may have operated in more than one district during the year.
[c] No commercial fall season, except in District 6 in 1992 and in Subdistrict 5-D and District 6 in 1994.

Appendix A.10. Commercial salmon pack by species and type of processing, Yukon Area, 1960-1996. [a]

Year	Cases (48#)			Fresh-Frozen (round wt. in lbs.)			Cured Chinook		Cured Chum		Salmon Roe (lbs.)
	Chinook	Coho	Chum	Chinook	Coho	Chum	Tierces	Half Tierces	Tierces	Half Tierces	
1960	13,000			[b]	[b]	[b]	250	180			
1961	19,474			[b]	[b]	[b]	504	146			
1962	15,959	512	1,760	[b]	[b]	[b]	464	280			
1963	16,400	1,190		[b]	[b]	[b]	[b]	[b]			
1964	12,041			[b]	17,000	66,770	537	499			
1965	18,149			275,000	2,500	160,500	670	67			
1966	14,026	836	2,812	414,000	61,355	301,240	398	60			
1967	21,503		126	475,900	66,400	366,496	627	96			1,755
1968	19,499		816	581,690	93,154	454,409	351	170			21,000
1969	9,560	1,104	4,499	423,597	26,973 [c]	829,586 [c]	647	95	15		29,000
1970	6,431	1,002	6,413	716,600	12,900	1,725,000	447	191	51		26,300
1971	6,500	502	3,213	1,058,034	45,836	1,432,455	659	229	139		55,177
1972	7,418	1,005	6,249	1,002,395	83,960	1,495,922	497	147			85,278
1973	5,227	1,008	9,902	1,339,317	181,928	2,929,532	61	133		72	137,594
1974	6,660	603	21,074	1,052,666	58,816	3,879,300	381	56	57		208,842
1975	5,297	40	14,226	731,902	13,299	4,751,941	80	53	45	119	201,404
1976	3,921	80	11,375	1,398,779	29,778	4,256,679	93	92	72	10	226,893
1977	4,642	415	9,428	1,513,484	270,241	4,877,918	180	237	26		210,568
1978	5,711	74	9,340	1,473,354	168,241	8,639,156	222	117	7	75	261,422
1979	6,277	22	7,854	2,014,156	108,011	8,098,075	112	91		2	410,540
1980	8,764	130	15,783	3,341,262	56,295	8,781,062	29	18		37	579,927
1981	1,107	378	11,573	3,636,238	130,097	11,398,680	25	13	9	28	507,550
1982		7	751	2,790,456	246,500	4,992,877		19		1	584,053
1983		198	1,181	3,000,843	72,447	10,637,613	5	39		7	426,220
1984		5	1,768	2,426,205	590,526	5,516,532		36		16	468,244
1985				2,953,199	409,725	5,462,462		9		20 [d]	476,024
1986				2,012,324	299,054	5,960,857		15		28 [e]	502,952
1987				2,830,312	0	3,013,889		36			286,099
1988 [f]				1,970,879	624,734	9,111,943		10		22 [g]	577,748
1989 [f]				2,005,949	585,216	8,864,714		6		16	303,298
1990 [f]				1,846,081	283,504	3,166,199		3		1,368 [i]	261,016
1991 [h]				2,017,188	708,902	3,978,482				2,547 [i]	350,174
1992				2,537,833	40,685	2,398,093					260,590
1993				1,905,414	0	634,931					97,630
1994				2,230,301	744	528,666					183,873
1995				2,635,972	317,357	3,524,754					498,925
1996				1,806,242	400,960	1,733,129					443,939

[a] Pack represents type of processing when fish were shipped out of districts; roe includes unprocessed roe sold by fishers and estimated production of roe from in the round purchases.

[b] Information not available.

[c] Includes approximately 11,600 and 110,500 (round weight) of coho and chum salmon respectively, as salted fish for Japanese market.

[d] Additionally 13 half tierces of coho salmon were packed.

[e] Additionally 2 half tierces of coho salmon were packed.

[f] Does not include District 6 test fish sales.

[g] Additionally 1 half tierce of coho salmon was packed.

[h] Beginning in 1991, no ADF&G test fish sales are included.

[i] Chum salmon are represented in pounds of salted fillets.

Appendix A.11. Estimated average prices paid to fishermen, Yukon Area, 1964–1996.

	Lower Yukon Area				Upper Yukon Area								
Year	Chinook	Summer Chum	Fall Chum	Coho	Chinook	Chinook Roe	Summer Chum	Summer Chum Roe	Fall Chum	Fall Chum Roe	Coho	Coho Roe	Salmon Roe
1964	0.17		0.03										
1965	0.20												
1966	0.20												
1967	0.19	0.05	0.05	0.07									
1968	0.18	0.06	0.06										
1969	0.19	0.08	0.08	0.08									
1970	0.22	0.09	0.09	0.12									
1971	0.24	0.10	0.10	0.12									
1972	0.24	0.11	0.11	0.13									
1973	0.30	0.16	0.16	0.18									
1974	0.38	0.21	0.21	0.25	0.50		0.15		0.13		0.15		0.75
1975	0.42	0.20	0.20	0.21	0.92		0.17		0.14		0.17		1.16
1976	0.51	0.24	0.24	0.27	0.74		0.19		0.16		0.19		1.33
1977	0.85	0.40	0.45	0.50	1.37		0.27	2.66	0.22		0.27		2.66
1978	0.90	0.45	0.47	0.60	0.87		0.24	[a]	0.25		0.24		[a]
1979	1.09	0.52	0.68	0.80	1.00		0.25	3.00	0.29		0.25		3.00
1980	1.04	0.20	0.28	0.36	0.85		0.23	2.50	0.27		0.29		2.50
1981	1.20	0.40	0.55	0.60	1.00		0.20	3.00	0.35		0.35		3.00
1982	1.41	0.40	0.55	0.69	1.02		0.18	2.75	0.28		0.37		2.75
1983	1.40	0.34	0.34	0.35	1.08		0.16	1.66	0.19		0.31		1.66
1984	1.50	0.26	0.32	0.50	0.95		0.23	1.78	0.26		0.24		1.78
1985	1.50	0.35	0.47	0.53	0.86		0.23	1.94	0.25		0.33		1.94
1986	1.63	0.38	0.49	0.71	0.89		0.22	2.08	0.14		0.21		2.08
1987	1.98	0.49	-	-	0.79		0.19	2.22	-		-		2.22
1988	2.97	0.66	1.01	1.38	1.04		0.23	4.33	0.32		0.37		4.33
1989	2.77	0.34	0.50	0.66	0.84		0.24	4.41	0.28		0.35		4.41
1990	2.84	0.24	0.45	0.66	0.72		0.11	4.41	0.29		0.34		4.38
1991	3.70	0.36	0.34	0.44	0.70	2.92	0.18	4.21	0.23	3.56	0.30	2.50	4.03
1992	4.12	0.27	-	-	0.91	2.82	0.30	4.53	0.39	4.50	0.39	2.18	4.45
1993	2.70	0.38	-	-	1.06	5.52	0.35	8.53	-	-	-	-	8.29
1994	2.07	0.21	-	-	0.92	3.11	0.20	3.77	0.16	1.50	0.48	1.50	3.57
1995	2.09	0.16	0.15	0.29	0.77	2.64	0.13	3.57	0.13	2.96	0.14	2.51	3.49
1996	1.95	0.09	0.10	0.26	0.95	2.57	0.07	3.05	0.13	1.71	0.09	2.16	2.97
5-Year Ave. 1991-1995	2.94	0.28	-	-	0.87	3.40	0.23	4.92	-	-	-	-	4.77

[a] Data unavailable.

Appendix A.12. Average weight of commercial salmon catch in pounds, Yukon Area, 1964-1996. [a]

	Lower Yukon Area				Upper Yukon Area			
Year	Chinook	Summer Chum	Fall Chum	Coho	Chinook	Summer Chum	Fall Chum	Coho
1964	22.6							
1965	23.0							
1966	23.0							
1967	24.0			7.3				
1968	26.5							
1969	23.9			6.7				
1970	22.3			7.1				
1971	22.6			6.9				
1972	24.6	6.6	7.6	7.1				
1973	24.5	6.8	7.9	7.1				
1974	23.7	6.5	7.5	7.0	17.3	6.7	7.7	6.7
1975	22.0	6.5	7.5	7.2	17.7	6.6	8.0	6.6
1976	21.9	6.5	7.5	6.6	18.4	6.4	8.0	7.5
1977	23.9	7.0	8.0	7.5	17.6	6.5	8.0	6.5
1978	24.0	7.1	7.7	7.0	20.2	6.8	7.4	6.4
1979	20.9	7.4	7.4	7.3	20.2	6.6	7.7	6.5
1980	22.5	6.9	6.9	6.4	16.0	6.6	7.7	6.5
1981	24.8	7.5	8.0	6.8	23.7	7.1	7.4	5.7
1982	23.0	7.1	7.7	6.7	21.4	7.1	7.5	6.5
1983	20.5	7.2	7.9	7.0	19.1	6.6	7.7	6.0
1984	20.5	6.8	7.5	7.0	19.6	6.4	7.3	6.1
1985	20.3	6.7	7.7	7.4	18.4	6.1	7.5	6.4
1986	20.2	6.9	7.2	6.3	19.7	6.1	8.0	6.0
1987	21.7	6.8			20.0	6.8		
1988	19.6	7.0	7.9	7.3	18.6	6.9	7.9	6.6
1989	19.9	7.2	7.5	7.3	17.9	6.8	7.4	6.0
1990	19.6	7.3	7.7	6.8	16.8	6.9	7.0	6.2
1991	20.4	6.7	7.4	7.0	17.6	6.5	6.8	5.7
1992	21.5	6.9			19.9	5.6	6.8	6.2
1993	20.5	6.6			17.8	7.2		
1994	20.3	6.5			15.7	5.8	6.2	6.2
1995	21.6	6.7	7.5	6.9	17.8	5.4	7.0	7.0
1996	20.6	7.8	7.7	7.6	16.2	6.0	6.2	7.2
5-Year Ave. 1991-1995	20.9	6.7			17.8	6.1		

[a] Information not available for some years. Data obtained from age-length-weight samples or fish ticket entries.

Appendix A.13 Commercial chinook salmon harvest taken under quotas or guideline harvest ranges (GHR), Lower Yukon Area, 1974-1996.

Year	Districts 1 and 2		District 3	
	Catch	GHR	Catch	Quota/GHR
1974	-	-	3,480	3,000
1975	-	-	4,177	3,000
1976	-	-	4,148	3,000
1977	-	-	3,965	3,000
1978	-	-	2,916	2,000
1979 [a]	-	-	5,018	1,800-2,200
1980	-	-	5,240	1,800-2,200
1981	145,287	60,000-120,000	4,023	1,800-2,200
1982	113,582	60,000-120,000	2,609	1,800-2,200
1983	138,686	60,000-120,000	4,106	1,800-2,200
1984	111,368	60,000-120,000	3,039	1,800-2,200
1985	138,376	60,000-120,000	2,588	1,800-2,200
1986	94,884	60,000-120,000	901	1,800-2,200
1987	124,101	60,000-120,000	2,039	1,800-2,200
1988	91,240	60,000-120,000	1,767	1,800-2,200
1989	94,736	60,000-120,000	1,645	1,800-2,200
1990	84,260	60,000-120,000	2,341	1,800-2,200
1991	95,592	60,000-120,000	2,344	1,800-2,200
1992	112,351	60,000-120,000	1,819	1,800-2,200
1993	86,579	60,000-120,000	1,501	1,800-2,200
1994	103,933	60,000-120,000	1,114	1,800-2,200
1995	117,564	60,000-120,000	0	1,800-2,200
1996	86,851	60,000-120,000	0	1,800-2,200

[a] Beginning in 1979, quotas were replaced by guideline harvest ranges.

Appendix A.14. Estimated commercial chinook salmon harvest taken under quotas or guideline harvest ranges (GHR), Upper Yukon Area, 1974-1996.

Year	District 4		Subdistricts 5-ABC		Subdistricts 5-D		District 6	
	Estimated Harvest [a]	Quota/GHR	Estimated Harvest [a]	Quota/GHR	Estimated Harvest [a]	Quota/GHR	Estimated Harvest [a]	Quota/GHR
1974	685	1,000	2,663	3,000 [b]			1,473	1,000
1975	389	1,000	2,872	3,000 [b]			500	1,000
1976	409	1,000	3,151	3,000 [b]			1,102	1,000
1977	985	1,000	4,162	3,000 [b]			1,008	1,000
1978	608	1,000	3,079	3,000 [b]			635	1,000
1979 [c]	1,989	900-1,100	3,389	2,700-3,300 [b]			772	900-1,100
1980	1,521	900-1,100	4,891	2,700-3,300 [b]			1,947	900-1,100
1981	1,347	2,250-2,850	5,625	2,400-2,800	749	300-500	987	600-800
1982	1,087	2,250-2,850	4,690	2,400-2,800	695	300-500	981	600-800
1983	601	2,250-2,850	3,370	2,400-2,800	236	300-500	911	600-800
1984	961	2,250-2,850	3,285	2,400-2,800	384	300-500	867	600-800
1985	664	2,250-2,850	2,984	2,400-2,800	434	300-500	1,142	600-800
1986	502	2,250-2,850	2,427	2,400-2,800	306	300-500	950	600-800
1987	1,524	2,250-2,850	2,539	2,400-2,800	566	300-500	1,202	600-800
1988	3,159	2,250-2,850	2,975	2,400-2,800	461	300-500	762	600-800
1989	2,790	2,250-2,850	2,901	2,400-2,800	385	300-500	1,741	600-800
1990	3,538	2,250-2,850	2,822	2,400-2,800	543	300-500	2,156	600-800
1991	3,582	2,250-2,850	3,272	2,400-2,800	554	300-500	1,072	600-800
1992	2,394	2,250-2,850	3,398	2,400-2,800	457	300-500	753	600-800
1993	1,577	2,250-2,850	2,608	2,400-2,800	400	300-500	1,445	600-800
1994	2,443	2,250-2,850	3,294	2,400-2,800	450	300-500	2,606	600-800
1995	499	2,250-2,850	2,753	2,400-2,800	489	300-500	2,747	600-800
1996	137	2,250-2,850	2,309	2,400-2,800	448	300-500	447	600-800

[a] The estimated harvest includes the number of fish sold in the round plus the estimated number of females harvested to produce the roe sold.
[b] Quota or guideline harvest range for District 5.
[c] In 1979, quotas were replaced by guideline harvest ranges.

Appendix A.15. Commercial summer chum salmon harvest taken under guideline harvest ranges (GHR), Lower Yukon Area, 1990-1996.

Year	Districts 1 and 2		District 3	
	Catch	GHR	Catch	GHR
1990	278,480	251,000-755,000	643	6,000-19,000
1991	315,619	251,000-755,000	8,912	6,000-19,000
1992	324,458	251,000-755,000	65	6,000-19,000
1993	92,991	251,000-755,000	463	6,000-19,000
1994	55,201	251,000-755,000	35	6,000-19,000
1995	226,083	251,000-755,000	0	6,000-19,000
1996	123,233	251,000-755,000	1,534	6,000-19,000

Appendix A.16. Estimated commercial summer chum salmon harvest taken under guideline harvest ranges (GHR), Upper Yukon Area, 1990-1996.

Year	Subdistrict 4-A				Anvik River		Subdistrict 4-BC		District 5		District 6	
	Pounds of Roe	GHR (Pounds of Roe)	Estimated Harvest [a]	GHR	Pounds of Roe	Roe Cap	Estimated Harvest [a]	GHR	Estimated Harvest [b]	GHR	Estimated Harvest [b]	GHR
1990	95,541	61,000-183,000	197,621	113,000-338,000			24,929	16,000-47,000	671	1,000-3,000	14,833	13,000-38,000
1991	128,231	61,000-183,000	290,255	113,000-338,000			19,389	16,000-47,000	35	1,000-3,000	23,892	13,000-38,000
1992	99,701	61,000-183,000	184,171	113,000-338,000			27,225	16,000-47,000	430	1,000-3,000	7,228	13,000-38,000
1993	20,485	61,000-183,000	38,196	113,000-338,000			4,761	16,000-47,000	0	1,000-3,000	3,705	13,000-38,000
1994	62,801	61,000-183,000	131,794	113,000-338,000	19,532	[c]	17,239	16,000-47,000	464	1,000-3,000	31,434	13,000-38,000
1995	189,252	61,000-183,000	419,688	113,000-338,000	48,477	50,000	80,155	16,000-47,000	316	1,000-3,000	37,428	13,000-38,000
1996	181,050	61,000-183,000	356,938	113,000-338,000	76,318	100,000	68,639	16,000-47,000	336	1,000-3,000	46,890	13,000-38,000

[a] Subdistrict 4-A, 4-B, and 4-C harvest includes estimated harvest of females and incidental males to produce roe sold.
[b] Estimated harvest includes the estimated number of females to produce roe sold.
[c] No summer chum salmon roe cap established for Anvik River Management Area in 1994.

Appendix A.17. Commercial fall chum salmon harvest taken under quotas or guideline harvest ranges (GHR), Lower Yukon Area, 1974-1996.

Year	Districts 1, 2, and 3	
	Catch	Quota/GHR
1974	230,128	200,000
1975	215,439	200,000
1976	131,313	200,000
1977	199,603	200,000
1978	191,120	200,000
1979 [a]	229,403	120,000-220,000
1980	204,229	120,000-220,000
1981	341,760	120,000-220,000
1982	199,880	120,000-220,000
1983	220,034	120,000-220,000
1984	155,983	120,000-220,000
1985	175,602	120,000-220,000
1986	113,452	0-110,000
1987	0	0-110,000
1988	78,825	0-110,000
1989	187,125	0-110,000
1990	66,061	60,000-220,000
1991	171,565	60,000-220,000
1992	0	60,000-220,000
1993	0	60,000-220,000
1994	0	60,000-220,000
1995	170,176	60,000-220,000
1996	63,280	60,000-220,000

[a] Beginning in 1979 quotas were replaced by guideline harvest ranges.

Appendix A.18. Estimated commercial fall chum and coho salmon combined harvest from 1974 - 1992 and fall chum salmon harvest only (beginning in 1993) taken under quotas or guideline harvest ranges (GHR), Upper Yukon Area, 1974-1996.

Year	District 4		Subdist. 4-BC		District 5		Subdistricts 5-ABC		Subdistrict 5-D		District 6	
	Estimated Harvest [a]	GHR	Estimated Harvest [a]	GHR	Estimated Harvest [a]	GHR	Estimated Harvest [a]	GHR	Estimated Harvest [a]	GHR	Estimated Harvest [a]	GHR
1974	9,213	10,000	-	-	24,960	25,000	-	-	-	-	28,363	15,000
1975	13,666	10,000	-	-	27,217	25,000	-	-	-	-	18,745	15,000
1976	1,742	10,000	-	-	5,387	25,000	-	-	-	-	19,051	15,000
1977	13,980	10,000	-	-	25,732	25,000	-	-	-	-	19,957	15,000
1978	12,741	10,000	-	-	26,237	25,000	-	-	-	-	20,012	15,000
1979 [b]	-	-	52,253	10,000-40,000	55,556	10,000-40,000	-	-	-	-	44,146	7,500-22,500
1980	-	-	32,355	10,000-40,000	42,376	10,000-40,000	-	-	-	-	20,746	7,500-22,500
1981	-	-	13,393	10,000-40,000	93,575	-	[c]	8,000-36,000	[c]	2,000-4,000	31,292	5,500-20,500
1982	-	-	4,076	10,000-40,000	13,635	-	[c]	8,000-36,000	[c]	2,000-4,000	15,196	5,500-20,500
1983	-	-	6,446	10,000-40,000	-	-	40,901	8,000-36,000	3,092	2,000-4,000	43,358	5,500-20,500
1984	-	-	10,935	10,000-40,000	-	-	21,147	8,000-36,000	2,970	2,000-4,000	28,308	5,500-20,500
1985	-	-	27,915	10,000-40,000	-	-	23,160	8,000-36,000	2,178	2,000-4,000	54,114	5,500-20,500
1986	-	-	2,045	0-20,000	-	-	21,105	0-18,000	1,343	0-2,000	2,515	0-10,250
1987	-	-	0	0-20,000	-	-	0	0-18,000	0	0-2,000	0	0-10,250
1988	-	-	17,085	0-20,000	-	-	14,217	0-18,000	2,780	0-2,000	37,622	0-10,250
1989	-	-	15,186	0-20,000	-	-	18,976	0-18,000	3,312	0-2,000	72,527	0-10,250
1990	-	-	8,166	5,000-40,000	-	-	6,243	4,000-36,000	2,733	1,000-4,000	65,779	2,750-20,500
1991	-	-	6,105	5,000-40,000	-	-	28,900	4,000-36,000	3,214	1,000-4,000	54,222	2,750-20,500
1992	-	-	0	5,000-40,000	-	-	0	4,000-36,000	0	1,000-4,000	27,001	2,750-20,500
1993 [d]	-	-	0	5,000-40,000	-	-	0	4,000-36,000	0	1,000-4,000	0	2,750-20,500
1994	-	-	0	5,000-40,000	-	-	0	4,000-36,000	3,630	1,000-4,000	4,369	2,750-20,500
1995	-	-	8,731	5,000-40,000	-	-	26,054	4,000-36,000	3,979	1,000-4,000	74,117	2,750-20,500
1996	-	-	2,918	5,000-40,000	-	-	17,461	4,000-36,000	4,397	1,000-4,000	17,574	2,750-20,500

[a] The estimated harvest is the number of fish sold in the round plus the estimated number of females harvested to produce the roe sold.
[b] In 1979, quotas were replaced by guideline harvest ranges.
[c] Harvest by subdistrict not available.
[d] Regulations were changed to exclude coho salmon from GHR beginning in 1993.

Appendix A.19. Yukon River chinook salmon total utilization in numbers of fish by district, area and country, 1961-1996. [a]

	District 1					District 2				District 3			Lower Yukon Area Subtotals				
Year	Subsist	Comm [b,c]	Personal Use	ADF&G Test Fish	Total	Subsist	Comm [b,c]	ADF&G Test Fish	Total	Subsist	Comm	Total	Subsist	Comm	Personal Use	ADF&G Test Fish	Total
1961		84,466			84,466		29,026		29,026		4,368	4,368		117,860			117,860
1962		87,099			87,099		22,224		22,224		4,687	4,687		94,010			94,010
1963		85,004			85,004		24,221		24,221		7,020	7,020		116,245			116,245
1964		67,555			67,555		20,246		20,246		4,705	4,705		92,506			92,506
1965		89,268			89,268		23,763		23,763		3,204	3,204		116,235			116,235
1966		70,788			70,788		16,927		16,927		3,612	3,612		91,327			91,327
1967		104,350			104,350		20,239		20,239		3,618	3,618		128,207			128,207
1968		79,465			79,465		21,392		21,392		4,543	4,543		105,400			105,400
1969		71,688			71,688		14,756		14,756		3,595	3,595		90,039			90,039
1970		56,648			56,648		17,141		17,141		3,705	3,705		77,494			77,494
1971		86,042			86,042		19,226		19,226		3,490	3,490		108,758			108,758
1972		70,052			70,052		17,855		17,855		3,841	3,841		91,748			91,748
1973		56,981			56,981		13,859		13,859		3,204	3,204		74,044			74,044
1974		71,840			71,840		17,948		17,948		3,480	3,480		93,268			93,268
1975		44,585			44,585		11,315		11,315		4,177	4,177		60,077			60,077
1976		62,410			62,410		16,556		16,556		4,148	4,148		83,114			83,114
1977		69,915			69,915		16,722		16,722		3,965	3,965		90,602			90,602
1978	5,246	59,006			64,252	3,964	32,924		36,888	3,902	2,916	6,818	13,112	94,846			107,958
1979	2,879	75,007			77,886	4,268	41,498		45,766	3,325	5,018	8,343	10,472	121,523			131,995
1980	3,669	90,382			94,051	3,674	50,004		53,678	4,818	5,240	10,058	12,161	145,626			157,787
1981	2,282	99,506			101,788	3,580	45,781		49,361	4,011	4,023	8,034	9,873	149,310			159,183
1982	2,311	74,450			76,761	2,109	39,132		41,241	3,359	2,609	5,968	7,779	116,191			123,970
1983	6,263	95,457			101,720	9,065	43,229		52,294	4,910	4,106	9,016	20,238	142,792			163,030
1984	4,624	74,671			79,295	7,172	36,697		43,869	4,394	3,039	7,433	16,190	114,407			130,597
1985	3,071	90,011			93,082	3,468	48,365		51,833	3,342	2,588	5,930	9,881	140,964			150,845
1986	5,275	53,035			58,310	6,483	41,849		48,332	4,305	901	5,206	16,063	95,785			111,848
1987	7,278	76,643	0		83,921	9,866	47,458		57,324	4,700	2,809	8,747	21,852	126,140	0		147,992
1988	3,938	56,120	67	989	61,114	3,823	35,120	68	39,011	4,547	1,767	6,314	12,308	93,007	67	1,057	106,439
1989	4,565	61,570	286	794	67,215	7,147	33,166	59	40,372	4,778	1,645	6,423	16,490	96,381	286	853	114,010
1990	6,619	51,199	450	1,063	59,331	9,546	33,061	152	42,759	4,093	2,341	6,434	20,258	86,601	450	1,215	108,524
1991	5,925	56,332		485	62,742	7,617	39,260	113	46,990	3,187	2,344	5,531	16,729	97,936	0	598	115,263
1992	5,141	74,212		930	80,283	7,074	38,139	0	45,213	4,991	1,819	6,810	17,206	114,170	0	930	132,306
1993	10,423	49,286		1,408	61,117	11,516	37,293	164	48,973	6,602	1,501	8,103	28,541	88,080	0	1,572	118,193
1994	6,654	62,241		1,561	70,456	9,034	41,692	70	50,796	6,149	1,114	7,263	21,837	105,047	0	1,631	128,515
1995	5,960	76,106		2,078	84,144	9,037	41,458	74	50,569	5,419	0	5,419	20,416	117,564	0	2,152	140,132
1996	3,646	56,642		1,698	61,986	7,780	30,209	0	37,989	6,783	0	6,783	18,209	86,851	0	1,698	106,758
Avg. Harvest:																	
1991-1995	6,821	63,635		1,292	71,748	8,856	39,568	84	48,508	5,270	1,356	6,625	20,946	104,559	0	1,189	126,882
1986-1995	6,178	61,674			68,863	8,114	38,850		47,034	4,878	1,547	6,425	19,170	102,071			122,322

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	District 4				District 5					District 6						Upper Yukon Area Subtotals					
Year	Subsist	Comm	Comm-Related [a]	Total	Subsist	Comm [b]	Comm-Related [c]	Personal Use	Total	Subsist	Comm [b]	Comm-Related [c]	Personal Use	ADF&G Test Fis	Total	Subsist	Comm	Comm-Related [c]	Personal Use	ADF&G Test Fis	Total [d]
1961																	1,804	0			1,804
1962																	724	0			724
1963																	803	0			803
1964																	1,081	0			1,081
1965																	1,863	0			1,863
1966																	1,988	0			1,988
1967																	1,449	0			1,449
1968																	1,126	0			1,126
1969																	988	0			988
1970																	1,651	0			1,651
1971																	1,749	0			1,749
1972																	1,092	0			1,092
1973																	1,309	0			1,309
1974		695	0	695		2,663	0		2,663		1,473	0									
1975		389	0	389		2,872	0		2,872		500	0					3,761	0			3,761
1976		409	0	409		3,151	0		3,151		1,102	0					4,662	0			4,662
1977		985	0	985		4,162	0		4,162		1,008	0					6,155	0			6,155
1978	5,549	608	0	6,157	10,405	3,079	0		13,484	1,231	635	0			1,866	17,185	4,322	0			21,507
1979	7,203	1,989	0	9,192	11,997	3,389	0		15,386	1,333	772	0			2,105	20,533	6,150	0			26,683
1980	11,053	1,521	0	12,574	17,684	4,891	0		22,575	1,826	1,947	0			3,773	30,563	8,359	0			38,922
1981	4,432	1,347	0	5,779	13,300	6,374	0		19,674	2,085	987	0			3,072	19,817	8,708	0			28,525
1982	5,077	1,087	0	6,164	12,859	5,385	0		18,244	2,443	981	0			3,424	20,379	7,453	0			27,832
1983	9,754	601	0	10,355	16,780	3,606	0		20,386	2,706	911	0			3,617	29,240	5,118	0			34,358
1984	7,650	961	0	8,611	14,989	3,669	0		18,658	3,599	867	0			4,466	26,238	5,497	0			31,735
1985	7,425	664	0	8,089	15,090	3,418	0		18,508	7,375	1,142	0			8,517	29,890	5,224	0			35,114
1986	9,530	502	0	10,032	15,944	2,733	0		18,677	3,701	950	0			4,651	29,175	4,185	0	0		33,360
1987	7,914	1,524	0	9,438	17,556	3,758	0	1,706	23,020	4,096	3,338	0			7,434	29,566	8,620	0	1,706		39,892
1988	9,515	3,159	0	12,674	17,200	3,436	0	1,435	22,071	4,884	762	0	623	24	6,293	31,599	7,357	0	2,058	24	41,038
1989	9,074	2,790	0	11,864	20,336	3,286	0	1,877	25,499	2,546	1,741	0	453	440	5,180	31,956	7,817	0	2,330	440	42,543
1990	11,122	3,536	2	14,660	14,589	3,353	12	1,693	19,647	2,618	1,757	399	451	833	6,058	28,329	8,646	413	2,144	833	40,365
1991	11,100	2,446	1,136	14,682	16,429	3,810	16		20,255	2,515	686	386		91	3,678	30,044	6,942	1,538	0	91	38,615
1992	8,291	1,651	743	10,685	17,691	3,852	3		21,546	2,438	572	181		32	3,223	28,420	6,075	927	0	32	35,454
1993	11,914	1,349	228	13,491	22,111	3,008	0		25,119	2,709	1,113	332	426	0	4,580	36,734	5,470	560	426	0	43,190
1994	10,530	2,216	227	12,973	19,628	3,739	5		23,372	2,568	2,135	471		0	5,174	32,726	8,090	703	0	0	41,519
1995	9,474	262	237	9,973	16,886	3,242	0		20,108	1,779	1,660	1,087	399	0	4,925	28,119	5,164	1,324	399	0	35,006
1996	8,193	45	92	8,330	15,727	2,497	260		18,484	1,177	278	169	215	0	1,839	25,097	2,820	521	215	0	28,653
Avg. Harvest:																					
1991-1995	10,262	1,585	514	12,361	18,545	3,530	5		22,080	2,402	1,233	491		25	4,316	31,209	6,348	1,010	165	25	38,757
1986-1995	9,646	1,944	267	12,047	17,835	3,422	4		21,931	2,985	1,471	286			5,120	30,667	6,837	547	906		39,098

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Appendix A.19. (page 3 of 3).

	Yukon Area Totals							Canada: Yukon Territories							Total Yukon River Drainage						
								Mainstem Yukon													
								Non-Commercial					Old Crow								
Year	Subsist	Comm	Comm-Related [a]	Personal Use	ADF&G Test Fish	Sport Fish [f]	Total	Domestic	Aboriginal	Sport [g]	Comm	Total	Aboriginal	Total	Subsist. [h]	Comm	Comm-Related [a]	Personal Use	ADF&G Test Fish	Sport Fish	Total
1961	21,488	119,664	0				141,152		9,300		3,446	12,746	500	13,246	31,288	123,110					154,398
1962	11,110	94,734	0				105,844		9,300		4,037	13,337	600	13,937	21,010	98,771					119,781
1963	24,862	117,048	0				141,910		7,750		2,283	10,033	44	10,077	32,656	119,331					151,987
1964	16,231	93,587	0				109,818		4,124		3,208	7,332	76	7,408	20,431	96,795					117,226
1965	16,608	118,098	0				134,706		3,021		2,265	5,286	94	5,380	19,723	120,363					140,086
1966	11,572	93,315	0				104,887		2,445		1,942	4,387	65	4,452	14,082	95,257					109,339
1967	16,448	129,656	0				146,104		2,920		2,187	5,107	43	5,150	19,411	131,843					151,254
1968	12,106	106,526	0				118,632		2,800		2,212	5,012	30	5,042	14,936	108,738					123,674
1969	14,000	91,027	0				105,027		957		1,640	2,597	27	2,624	14,984	92,667					107,651
1970	13,874	79,145	0				93,019		2,044		2,611	4,655	8	4,663	15,926	81,756					97,682
1971	25,684	110,507	0				136,191		3,260		3,178	6,438	9	6,447	28,953	113,685					142,638
1972	20,258	92,840	0				113,098		3,960		1,769	5,729		5,729	24,218	94,609					118,827
1973	24,317	75,353	0				99,670		2,319		2,199	4,518	4	4,522	26,640	77,552					104,192
1974	19,964	98,089	0				118,053	406	3,342		1,808	5,556	75	5,631	23,787	99,897					123,684
1975	13,045	63,838	0				76,883	400	2,500		3,000	5,900	100	6,000	16,045	66,838					82,883
1976	17,806	87,776	0				105,582	500	1,000		3,500	5,000	25	5,025	19,331	91,276					110,607
1977	17,581	96,757	0			156	114,494	531	2,247		4,720	7,498	29	7,527	20,388	101,477				156	122,021
1978	30,297	99,168	0			523	129,988	421	2,486		2,975	5,881		5,881	33,203	102,143				523	135,869
1979	31,005	127,673	0			554	159,232	1,200	3,000		6,175	10,375		10,375	35,205	133,848				554	169,607
1980	42,724	153,985	0			956	197,665	3,500	7,546	300	9,500	20,846	2,000	22,846	55,770	163,485				1,256	220,511
1981	29,690	158,018	0			769	188,477	237	8,879	300	8,593	18,009	100	18,109	38,906	166,611			0	1,069	206,586
1982	28,158	123,644	0			1,006	152,808	435	7,433	300	8,640	16,808	400	17,208	36,426	132,284			0	1,306	170,016
1983	49,478	147,910	0			1,048	198,436	400	5,025	300	13,027	18,752	200	18,952	55,103	160,937			0	1,348	217,388
1984	42,428	119,904	0			351	162,683	260	5,850	300	9,885	16,295	500	16,795	49,038	129,789			0	651	179,478
1985	39,771	146,188	0			1,368	187,327	478	6,800	300	12,573	19,151	150	19,301	46,199	158,761			0	1,668	206,628
1986	45,238	99,970	0	0		796	146,004	342	8,625	300	10,797	20,064	300	20,364	54,505	110,767			0	1,096	166,368
1987	51,418	134,760	0	1,706		502	188,386	330	6,069	300	10,864	17,563	51	17,614	57,868	145,624		1,706	0	802	206,000
1988	43,907	100,364	0	2,125	1,081	944	148,421	282	7,178	650	13,217	21,327	100	21,427	51,467	113,581		2,125	1,081	1,594	169,848
1989	48,446	104,198	0	2,616	1,293	1,053	157,606	400	6,930	300	9,789	17,419	525	17,944	56,301	113,987		2,616	1,293	1,353	175,550
1990	46,587	95,247	413	2,594	2,048	544	149,433	247	7,109	300	11,324	18,980	258	19,238	56,201	106,571	413	2,594	2,048	844	168,671
1991	46,773	104,878	1,538	0	689	773	154,851	227	9,011	300	10,906	20,444	163	20,607	56,174	115,784	1,538		689	1,073	175,258
1992	45,626	120,245	927	0	962	431	168,191	277	6,349	300	10,877	17,803	100	17,903	52,352	131,122	927		962	731	186,094
1993	65,275	93,550	560	426	1,572	1,695	163,078	243	5,576	300	10,350	16,469	142	16,611	71,236	103,900	560	426	1,572	1,995	179,689
1994	54,563	113,137	703	0	1,631	2,281	172,315	373	8,089	300	12,028	20,790	428	21,218	63,453	125,165	703	0	1,631	2,581	193,533
1995	48,335	122,728	1,324	399	2,152	2,520	177,563	300	7,945	700	11,146	20,091	796	20,887	57,576	133,874	1,324	399	2,152	3,225	198,550
1996	43,306	89,671	521	215	1,698	3,151	138,562	141	8,451	850	10,164	19,606	66	19,672	51,964	99,835	521	215	1,698	4,001	158,234
Avg. Harvest:																					
1991-1995	52,154	110,908	1,010	165	1,401	1,541	167,180	284	7,394	380	11,061	19,119	326	19,445	60,158	121,969	1,010		1,401	1,921	186,625
1986-1995	49,837	108,908	547	987		1,154	162,575	302	7,288	375	11,130	19,095	286	19,381	57,713	120,038			1,143	1,529	181,956

[a] Subsistence harvest not available by district until 1978. ADF&G test fish is the number of fish sold by test fisheries. Does not include coastal subsistence harvest in Hooper Bay and Scammon Bay.
[b] Includes estimates of illegal sales (refer to Appendix A.4).
[c] Includes department test fish sales prior to 1988.
[d] Commercial related refers to the estimated harvest of female chinook salmon to produce roe sold.
[f] Estimated sport fish harvest for Alaskan portion of the Yukon River drainage. A majority of the sport fish harvest occurs in the Tanana River drainage (District 6).
[g] Canadian sport fish harvest unknown prior to 1980.
[h] Includes Alaskan subsistence harvest and Canadian Domestic and Aboriginal harvests.

Appendix A.20. Yukon River summer chum salmon total utilization in numbers of fish by district and area, 1961-1996.[a]

	District 1					District 2				District 3			Lower Yukon Area Subtotals				
Year	Subsist	Comm[b]	Personal Use	ADF&G Test Fish	Total	Subsist	Comm[b]	ADF&G Test Fish	Total	Subsist	Comm	Total	Subsist	Comm[b]	Personal Use	ADF&G Test Fish	Total
1961		0					0				0			0			
1962		0					0				0			0			
1963		0					0				0			0			
1964		0					0				0			0			
1965		0					0				0			0			
1966		0					0				0			0			
1967		9,453			9,453		1,425		1,425		57	57		10,935			10,935
1968		12,995			12,995		1,407		1,407		68	68		14,470			14,470
1969		56,886			56,886		5,080		5,080		0	0		61,966			61,966
1970		117,357			117,357		19,649		19,649		0	0		137,006			137,006
1971		93,928			93,928		6,112		6,112		50	50		100,090			100,090
1972		114,234			114,234		20,907		20,907		527	527		135,668			135,668
1973		221,644			221,644		63,402		63,402		463	463		285,509			285,509
1974		466,004			466,004		74,152		74,152		1,721	1,721		541,877			541,877
1975		418,323			418,323		99,139		99,139		0	0		517,462			517,462
1976		273,204			273,204		99,190		99,190		9,802	9,802		382,196			382,196
1977		250,652			250,652		105,679		105,679		3,412	3,412		359,743			359,743
1978	30,897	393,785			424,682	21,684	227,548		249,232	1,706	27,003	28,709	54,287	648,336			702,623
1979	16,144	369,934			386,078	23,276	172,838		196,114	9,531	40,015	49,546	48,951	582,787			631,738
1980	15,972	391,252			407,224	13,681	308,704		322,385	5,727	44,782	50,509	35,380	744,738			780,118
1981	11,310	507,158			518,468	14,218	351,878		366,096	7,430	54,471	61,901	32,958	913,507			946,465
1982	18,452	249,516			267,968	18,442	182,344		200,786	5,840	4,086	9,926	42,734	435,946			478,680
1983	24,679	451,164			475,843	27,396	248,092		275,488	4,609	14,600	19,209	56,684	713,856			770,540
1984	28,459	292,676			321,135	26,996	236,931		263,927	7,351	1,087	8,438	62,806	530,694			593,500
1985	24,349	247,486			271,835	19,795	188,099		207,894	3,687	1,792	5,479	47,831	437,377			485,208
1986	36,854	381,127			419,981	41,496	288,427		329,923	12,238	442	12,680	92,588	669,996			762,584
1987	30,760	222,898	0		253,658	33,134	174,876		208,010	12,176	3,501	15,677	76,070	401,275	0		477,345
1988	28,934	645,322	416	2,876	677,548	28,787	424,461	711	453,959	14,609	13,965	28,574	72,330	1,083,748	416	3,587	1,160,081
1989	52,844	544,373	381	3,408	601,006	39,703	343,032	930	383,665	12,824	7,578	20,402	105,371	894,983	381	4,338	1,005,073
1990	36,999	146,725	256	2,186	186,166	28,453	131,755	752	160,960	9,521	643	10,164	74,973	279,123	256	2,938	357,290
1991	27,790	140,470		1,373	169,633	20,703	175,149	703	196,555	5,545	8,912	14,457	54,038	324,531		2,076	380,645
1992	33,239	177,329		1,918	212,486	24,731	147,129	0	171,860	9,599	65	9,664	67,569	324,523		1,918	394,010
1993	34,285	73,659		1,379	109,323	25,417	19,332	490	45,239	7,559	463	8,022	67,261	93,454		1,869	162,584
1994	44,753	42,332		2,769	89,854	28,652	12,869	443	41,964	8,551	35	8,586	81,956	55,236		3,212	140,404
1995	34,990	142,266		5,672	182,928	27,190	83,817	401	111,408	12,143	0	12,143	74,323	226,083		6,073	306,479
1996	27,289	92,506		7,309	127,104	28,426	30,727	0	59,153	11,368	1,534	12,902	67,083	124,767		7,309	199,159
Ave. Harvest																	
1991-1995	35,011	115,211		2,622	152,845	25,339	87,659	407	113,405	8,679	1,895	10,574	69,029	204,765		3,030	276,824
1986-1995	36,345	251,650			290,258	29,827	180,085		210,354	10,477	3,560	14,037	76,648	435,295			514,650

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Appendix A.20. (p. 2 of 3)

Year	District 4 Subsist [e]	District 4 Comm	District 4 Comm-Related [d]	District 4 Anvik River [e]	District 4 Total	District 5 Subsist [f]	District 5 Comm	District 5 Comm-Related [d]	District 5 Personal Use	District 5 Total	District 6 Subsist [f]	District 6 Comm	District 6 Comm-Related [d]	District 6 Personal Use	District 6 ADF&G Test Fish	District 6 Total	Upper Yukon Area Subtotals Subsist	Comm	Comm-Related	Personal Use	ADF&G Test Fish	Total
1961		0	0				0	0				0	0					0	0			
1962		0	0				0	0				0	0					0	0			
1963		0	0				0	0				0	0					0	0			
1964		0	0				0	0				0	0					0	0			
1965		0	0				0	0				0	0					0	0			
1966		0	0				0	0				0	0					0	0			
1967		0	0				0	0				0	0					0	0			
1968		0	0				0	0				0	0					0	0			
1969		0	0				0	0				0	0					0	0			
1970		0	0				0	0				0	0					0	0			
1971		0	0				0	0				0	0					0	0			
1972		0	0				0	0				0	0					0	0			0
1973		0	0				0	0				0	0					0	0			0
1974		27,866	0		27,866		6,831	0		6,831		13,318	0			13,318		48,015	0			48,015
1975		165,054	0		165,054		12,997	0		12,997		14,782	0			14,782		192,833	0			192,833
1976		211,307	0		211,307		774	0		774		6,617	0			6,617		218,698	0			218,698
1977		169,541	0		169,541		1,274	0		1,274		4,317	0			4,317		175,132	0			175,132
1978	93,139	364,184	16,920		474,243	20,423	4,892	605		25,920	3,534	34,814	8,236			46,584	117,096	403,890	25,761			546,747
1979	81,838	169,430	35,317		286,585	22,869	8,608	1,009		32,486	2,312	18,491	3,891			24,694	107,019	196,529	40,217			343,765
1980	117,305	147,560	135,824		400,689	8,594	456	0		9,050	6,426	35,855	3,282			45,563	132,325	183,871	139,106			455,302
1981	48,452	59,718	270,727		378,897	27,259	1,236	49		28,544	8,960	32,477	1,987			43,424	84,671	93,431	272,763			450,865
1982	57,967	3,647	254,072		315,686	9,770	213	21		10,004	6,942	21,597	1,517			30,056	74,679	25,457	255,610			355,746
1983	46,713	6,672	248,716		302,101	22,087	42	1,856		23,985	23,696	24,309	18			48,023	92,496	31,023	250,590			374,109
1984	49,230	1,009	277,061		327,300	31,488	645	47		32,180	23,106	56,249	335			79,690	103,824	57,903	277,443			439,170
1985	59,839	12,007	415,476		487,322	26,996	700	0		27,696	23,078	66,913	1,540			91,531	109,913	79,620	417,016			606,549
1986	53,020	300	465,235		518,555	21,833	690	0	0	22,523	14,896	50,483	2,146			67,525	89,749	51,473	467,381			608,603
1987	48,911	29,991	179,809		258,711	20,544	362	44	4,262	25,212	25,153	10,610	450			36,213	94,608	40,963	180,303	4,262		320,136
1988	86,605	24,051	466,023		576,679	28,960	722	363	567	30,612	8,686	40,129	1,646	1,242	0	51,703	124,251	64,902	468,032	1,809		658,994
1989	40,935	18,554	491,690		551,179	12,981	154	373	295	13,803	7,868	42,115	4,871	1,215	6,267	62,336	61,784	60,823	496,934	1,510	6,267	627,318
1990	26,534	12,364	210,186		249,084	9,817	11	660	641	11,129	4,285	11,127	3,706	930	5,325	25,373	40,636	23,502	214,552	1,571	5,325	285,586
1991	35,269	6,381	303,263		344,913	24,164	4	31		24,199	5,089	18,197	5,695		1,858	30,819	64,502	24,582	308,989	0	1,858	399,931
1992	35,812	2,659	208,737		247,208	12,612	102	328		13,042	9,504	5,029	2,199		49	16,781	57,928	7,790	211,264	0	49	277,031
1993	20,076	27	42,930		63,033	11,245	0	0		11,245	6,798	3,041	664	674	0	11,177	38,119	3,068	43,594	674	0	85,455
1994	27,468	3,611	145,423	22,573	199,095	12,506	229	235		12,970	16,544	21,206	10,226		0	47,976	56,536	25,046	178,457	0	0	259,049
1995	25,084	6,873	490,970	84,744	579,871	7,665	107	209		7,971	11,661	24,711	12,717	780	0	49,869	44,400	33,691	558,640	780	0	637,511
1996	16,425	0	425,607	84,633	526,665	11,509	0	336		11,845	7,486	22,360	24,530	905	0	55,281	35,420	22,360	535,106	905	0	593,791
Ave. Harvest:																						
1991-1995	28,746	4,310	238,265		286,784	13,636	88	161		13,885	8,715	14,437	6,300		381	30,125	51,097	18,836	260,189	291	381	330,794
1986-1995	39,973	10,681	300,427		358,813	16,232	238	224		17,271	10,446	22,665	4,432			39,377	66,652	33,584	312,815			415,481

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Appendix A.20. (p. 3 of 3).

	Yukon Area Totals						
Year	Subsist	Comm	Comm-Related	Personal Use	ADF&G Test Fish	Sport Fish[a]	Total
1961	305,317	0	0				305,317
1962	261,856	0	0				261,856
1963	297,094	0	0				297,094
1964	361,080	0	0				361,080
1965	336,848	0	0				336,848
1966	154,506	0	0				154,506
1967	206,233	10,935	0				217,168
1968	133,880	14,470	0				148,350
1969	156,191	61,966	0				218,157
1970	166,504	137,006	0				303,510
1971	171,487	100,090	0				271,577
1972	108,006	135,668	0				243,674
1973	161,012	285,509	0				446,521
1974	227,811	589,892	0				817,703
1975	211,888	710,295	0				922,183
1976	180,672	606,894	0				787,766
1977	159,502	534,675	0			316	694,693
1978	171,383	1,052,226	25,761			451	1,249,821
1979	155,970	779,316	40,217			328	975,831
1980	167,705	928,609	139,106			483	1,235,903
1981	117,629	1,006,938	272,763			612	1,397,942
1982	117,413	461,403	255,610			780	835,206
1983	149,180	744,879	250,590			998	1,145,647
1984	166,630	588,597	277,443			585	1,033,255
1985	157,744	516,997	417,016			1,267	1,093,024
1986	182,337	721,469	467,381	0		895	1,372,082
1987	170,678	442,238	180,303	4,262		846	798,327
1988	196,581	1,148,850	466,032	2,225	3,587	1,037	1,820,112
1989	167,155	955,806	496,934	1,891	10,605	2,131	1,634,522
1990	115,609	302,625	214,552	1,827	8,263	472	643,348
1991	118,540	348,113	308,969	0	3,934	1,037	781,813
1992	125,497	332,313	211,264	0	1,967	1,308	672,349
1993	105,380	96,522	43,594	874	1,869	564	248,603
1994	132,494	80,284	178,457	0	3,212	350	394,797
1995	118,723	259,774	558,640	780	6,073	1,174	945,164
1996	102,503	147,127	535,106	905	7,309	1,854	794,804
Ave. Harvest							
1991-1995	120,127	223,601	260,189	291	3,411	887	608,505
1986-1996	143,299	468,879	312,815	1,166		981	931,092

[a] Subsistence harvest estimates not available by district until 1978. Harvests prior to 1977 were estimated because catches of salmon other than chinook salmon we differentiated by species. ADF&G test fish is the number of salmon sold by test fisheries.

[b] Includes estimates of illegal sales (refer to Appendix A.4). Includes department test fish sales prior to 1988.

[c] In 1978 and 1979, the commercial related harvest was subtracted from the subsistence harvest because it was assumed this harvest was included in the reported s From 1980 through 1987, the District 4 subsistence harvest was also reduced to account for commercial related harvests being reported in the subsistence harvest. It was calculated that 50.2% of the reported subsistence harvest (excluding Innoko and Koyukuk River catches) was commercial related. Beginning in 1988, subsistence surveys documented subsistence only fishing catches and commercial related use separately.

[d] In District 4, excluding the Anvik River, commercial related refers to the estimated number of females and incidental males harvested to produce roe sold.

[e] Only roe has been sold in the Anvik River commercial fishery. The commercial related harvest shown is the estimated number of females harvested to produce roe

[f] From 1978 through 1988, the commercial related harvest was subtracted from the subsistence harvest in Districts 5 and 6 because it was assumed that this harvest in the reported subsistence harvest during that time period.

[g] In District 5 and 6, commercial related refers to the number of females harvested to produce roe sold.

[h] Estimated sport fish harvest for all chum salmon in Alaskan portion of the drainage. A majority of the sport fish harvest occurs in the Tanana River drainage (Distri

Appendix A.21. Yukon River fall chum salmon total utilization in numbers of fish, by district, area and country, 1961-1996. [a]

	District 1					District 2				District 3			Lower Yukon Area Subtotals				
Year	Subsist	Comm [b]	Personal Use	ADF&G Test Fish	Total	Subsist	Comm [b]	ADF&G Test Fish	Total	Subsist	Comm	Total	Subsist	Comm	Personal Use	ADF&G Test Fish	Total
1961		42,461			42,461				0			0		42,461			42,461
1962		53,116			53,116				0			0		53,116			53,116
1963					0				0			0		0			0
1964		8,347			8,347				0			0		8,347			8,347
1965		22,936			22,936				0			0		22,936			22,936
1966		69,836			69,836				0		1,209	1,209		71,045			71,045
1967		36,451			36,451				0		1,823	1,823		38,274			38,274
1968		49,857			49,857				0		3,068	3,068		52,925			52,925
1969		128,866			128,866				0		1,722	1,722		130,588			130,588
1970		200,306			200,306		4,858		4,858		3,285	3,285		208,449			208,449
1971		188,533			188,533				0			0		188,533			188,533
1972		136,711			136,711		12,898		12,898		1,313	1,313		150,922			150,922
1973		173,783			173,783		45,304		45,304			0		219,087			219,087
1974		176,036			176,036		53,540		53,540		552	552		230,128			230,128
1975		158,183			158,183		51,666		51,666		5,590	5,590		215,439			215,439
1976		105,851			105,851		21,212		21,212		4,250	4,250		131,313			131,313
1977		131,758			131,758		51,994		51,994		15,851	15,851		199,603			199,603
1978	390	127,947			128,337	1,297	51,646		52,943	266	11,527	11,793	1,953	191,120			193,073
1979	15,788	109,406			125,194	14,662	94,042		108,704	2,443	25,955	28,398	32,893	229,403			262,296
1980	7,433	106,829			114,262	12,435	83,881		96,316	2,320	13,519	15,839	22,188	204,229			226,417
1981	15,540	167,834			183,374	11,770	154,883		166,653	3,043	19,043	22,086	30,353	341,760			372,113
1982	10,016	97,484			107,500	9,511	96,581		106,092	1,659	5,815	7,474	21,186	199,880			221,066
1983	8,238	124,371			132,609	10,341	85,645		95,986	2,863	10,018	12,881	21,442	220,034			241,476
1984	8,685	78,751			87,636	11,394	70,803		82,197	2,233	6,429	8,662	22,512	155,983			178,495
1985	13,275	129,948			143,223	11,544	40,490		52,034	2,290	5,164	7,454	27,109	175,602			202,711
1986	9,000	59,352			68,352	13,483	51,307		64,790	2,155	2,793	4,948	24,638	113,452			138,090
1987	18,467	0	0		18,467	13,454	0		13,454	3,287	0	3,287	35,208	0	0		35,208
1988	5,475	44,890	5	639	51,009	8,600	31,845	16	40,461	1,747	2,090	3,837	15,822	78,825	5	655	95,307
1989	4,914	74,235	18	3,641	82,808	10,015	97,558	348	107,921	1,023	15,332	16,355	15,952	187,125	18	3,989	207,084
1990	5,335	25,269	60	2,068	32,732	6,187	37,077	96	43,360	2,056	3,715	5,771	13,578	66,061	60	2,164	81,863
1991	3,935	59,724		2,455	66,114	5,628	102,628	96	108,352	615	9,213	9,828	10,178	171,565	0	2,551	184,294
1992	5,216	0		0	5,216	7,382	0	0	7,382	2,358	0	2,358	14,956	0	0	0	14,956
1993	7,770	0		0	7,770	3,094	0	0	3,094	1,449	0	1,449	12,313	0	0	0	12,313
1994	4,887	0		0	4,887	4,151	0	0	4,151	862	0	862	9,900	0	0	0	9,900
1995	4,698	79,345		1,121	85,164	3,317	90,831	0	94,148	1,672	0	1,672	9,687	170,176	0	1,121	180,984
1996	4,147	33,629		1,717	39,493	5,287	29,651	0	34,938	2,706	0	2,706	12,140	63,280	0	1,717	77,137
Ave. Harvest:																	
1991-1995	5,301	27,814		715	33,830	4,714	38,692	19	43,425	1,391	1,843	3,234	11,407	68,348	0	734	80,489
1986-1995	6,970	34,282			42,252	7,531	41,125		48,711	1,722	3,314	5,037	16,223	78,720			96,000

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	District 4				District 5					District 6						Upper Yukon Area Subtotals					
Year	Subsist [c]	Comm	Comm-Related [g]	Total	Subsist [c]	Comm	Comm-Related [g]	Personal Use	Total	Subsist [c]	Comm	Comm-Related [g]	Personal Use	ADF&G Test Fish	Total	Subsist	Comm	Comm-Related	Personal Use	ADF&G Test Fish	Total
1961																	0	0			0
1962																	0	0			0
1963																	0	0			0
1964																	0	0			0
1965																	381	0			381
1966																	0	0			0
1967																	0	0			0
1968																	0	0			0
1969																	722	0			722
1970																	1,146	0			1,146
1971																	1,061	0			1,061
1972																	1,254	0			1,254
1973																	13,003	0			13,003
1974		9,213	0	9,213		23,551	0		23,551		26,884	0			26,884		59,648	0			59,648
1975		13,666	0	13,666		27,212	0		27,212		18,692	0			18,692		59,570	0			59,570
1976		1,742	0	1,742		5,387	0		5,387		17,948	0			17,948		25,077	0			25,077
1977		13,980	0	13,980		25,730	0		25,730		18,673	0			18,673		58,383	0			58,383
1978	8,931	10,968	1,721	21,640	46,485	21,016	5,220		72,721	26,870	13,259	3,687			43,816	82,286	45,263	10,628			138,177
1979	34,697	48,899	3,199	86,795	102,695	47,459	8,097		158,251	44,596	34,185	7,170			85,951	181,988	130,543	18,466			330,997
1980	19,328	27,978	4,347	51,653	75,861	41,771	605		118,237	50,260	19,452	68			69,780	145,449	89,201	5,020			239,670
1981	18,662	12,082	1,311	32,055	104,612	86,620	6,955		198,187	23,613	25,989	3,019			52,621	146,887	124,691	11,285			282,863
1982	20,152	3,894	167	24,213	71,786	13,593	42		85,421	18,968	6,820	596			26,384	110,906	24,307	805			136,018
1983	32,246	4,482	1,963	38,691	105,103	43,993	0		149,096	29,073	34,089	3,101			66,263	166,422	82,564	5,064			254,050
1984	26,937	7,625	2,215	36,777	98,376	24,060	57		122,493	22,670	20,584	56			43,290	149,983	52,249	2,328			204,560
1985	22,750	24,452	2,525	49,727	117,125	25,338	0		142,463	36,963	42,352	0			79,315	176,838	92,142	2,525			271,505
1986	26,126	2,045	0	28,171	87,729	22,053	395		110,177	24,973	1,892	182			27,047	138,828	25,990	577			165,395
1987	41,467	0	0	41,467	141,335 [f]	0	0	15,750	157,085	124,587 [g]	0	0	3,316		127,903	307,389	0	0	19,066		326,455
1988	16,958	15,662	1,421	34,041	84,209	16,989	0	1,762	102,960	34,597	21,844	1,808	2,114	27,008	87,369	135,764	54,495	3,227	3,876	27,008	224,370
1989	24,540	11,776	3,407	39,723	112,001	18,215	3,989	3,294	137,499	58,654	49,090	7,353	1,770	16,984	133,851	195,195	79,081	14,749	5,064	16,984	311,073
1990	19,241	4,989	3,177	27,407	90,513	7,778	1,198	3,723	103,212	44,568	43,182	7,793	1,393	7,060	103,996	154,322	55,949	12,168	5,116	7,060	234,615
1991	20,875	3,737	2,354	26,966	74,002	27,355	4,759		106,116	40,469	28,195	16,253	0	1,385	86,302	135,346	59,287	23,366	0	1,385	219,384
1992	21,232	0	0	21,232	45,701	0	0		45,701	25,713	15,721	3,301	0	1,407	46,142	92,646	15,721	3,301	0	1,407	113,075
1993	10,832	0	0	10,832	43,764	0	0		43,764	9,853	0	0	163	0	10,016	64,449	0	0	163	0	64,612
1994	13,325	0	0	13,325	66,396	3,630	0		70,026	33,597	1	4,368	0	0	37,966	113,318	3,631	4,368	0	0	121,317
1995	14,057	2,924	5,807	22,788	57,594	9,778	20,255		87,627	49,168	67,855	8,262	883	0	124,146	120,819	80,557	32,324	883	0	234,583
1996	16,786	2,918	0	19,704	63,473	11,878	9,980		85,331	36,467	10,266	7,306	356	0	54,397	116,726	25,062	17,286	356	0	159,432
Ave. Harvest:																					
1991-1995	16,064	1,332	1,632	19,029	57,491	8,153	5,003		70,647	31,760	22,354	6,037	205	556	60,915	105,316	31,839	12,672	205	556	150,590
1986-1995	20,865	4,113	1,617	26,595	80,324	10,580	3,060		96,417	44,618	22,778	4,732			78,474	145,808	37,471	9,408			201,466

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	Alaska Yukon Area Totals						Canadian Totals						Yukon Drainage (Alaska/Canada) Totals					
			Comm-	Personal	ADF&G		Old Crow	Mainstem Yukon River					Subsist or		Comm-	Personal	ADF&G	
Year	Subsist	Comm	Related	Use	Test Fish	Total	Aboriginal	Aboriginal	Domestic	Comm	Subtotal	Total	Non-Com [6]	Comm	Related	Use	Test Fish	Total
1961	101,772	42,461	0			144,233	2,000	3,800		3,276	7,076	9,076	107,572	45,737	0			153,309
1962	87,285	53,116	0			140,401	2,000	6,500		936	7,436	9,436	95,785	54,052	0			149,837
1963	99,031	0	0			99,031	20,000	5,500		2,196	7,696	27,696	124,531	2,196	0			126,727
1964	120,360	8,347	0			128,707	6,058	4,200		1,929	6,129	12,187	130,618	10,276	0			140,894
1965	112,283	23,317	0			135,600	7,535	2,183		2,071	4,254	11,789	122,001	25,388	0			147,389
1966	51,503	71,045	0			122,548	8,605	1,430		3,157	4,587	13,192	61,538	74,202	0			135,740
1967	68,744	38,274	0			107,018	11,768	1,850		3,343	5,193	16,961	82,362	41,617	0			123,979
1968	44,627	52,925	0			97,552	10,000	1,180		453	1,633	11,633	55,807	53,378	0			109,185
1969	52,063	131,310	0			183,373	3,377	2,120		2,279	4,399	7,776	57,560	133,589	0			191,149
1970	55,501	209,595	0			265,096	620	612		2,479	3,091	3,711	56,733	212,074	0			268,807
1971	57,162	189,594	0			246,756	15,000	150		1,761	1,911	16,911	72,312	191,355	0			263,667
1972	36,002	152,176	0			188,178	5,000	0		2,532	2,532	7,532	41,002	154,708	0			195,710
1973	53,670	232,090	0			285,760	6,200	1,129		2,806	3,935	10,135	60,999	234,896	0			295,895
1974	93,776	289,776	0			383,552	7,000	1,636	466	2,544	4,646	11,646	102,878	292,320	0			395,198
1975	86,591	275,009	0			361,600	11,000	2,500	4,600	2,500	9,600	20,600	104,691	277,509	0			382,200
1976	72,327	156,390	0			228,717	3,100	100	1,000	1,000	2,100	5,200	76,527	157,390	0			233,917
1977	82,771	257,986	0			340,757	5,560	1,430	1,499	3,990	6,919	12,479	91,260	261,976	0			353,236
1978	84,239	236,383	10,628			331,250	5,000	482	728	3,356	4,566	9,566	90,449	239,739	10,628			340,816
1979	214,881	359,946	18,466			593,293		11,000	2,000	9,084	22,084	22,084	227,881	369,030	18,466			615,377
1980	167,637	293,430	5,020			466,087	6,000	3,218	4,000	9,000	16,218	22,218	180,855	302,430	5,020			488,305
1981	177,240	466,451	11,285			654,976	3,000	2,410	1,611	15,260	19,281	22,281	184,261	481,711	11,285			677,257
1982	132,092	224,187	805			357,084	1,000	3,096	683	11,312	15,091	16,091	136,871	235,499	805			373,175
1983	187,864	302,598	5,064			495,526	2,000	1,200	300	25,990	27,490	29,490	191,364	328,588	5,064			525,016
1984	172,495	208,232	2,328			383,055	4,000	1,800	535	22,932	25,267	29,267	178,830	231,164	2,328			412,322
1985	203,947	267,744	2,525			474,216	3,500	1,740	279	35,746	37,765	41,265	209,466	303,490	2,525			515,481
1986	163,466	139,442	577			303,485	657	2,200	222	11,464	13,886	14,543	166,545	150,906	577			318,028
1987	342,597	0	0	19,066		361,663	135	3,622	132	40,591	44,345	44,480	346,486	40,591	0	19,066		406,143
1988	151,586	133,320	3,227	3,881	27,663	319,677	1,071	1,882	349	30,263	32,494	33,565	154,888	183,583	3,227	3,881	27,663	353,242
1989	211,147	266,206	14,749	5,082	20,973	518,157	2,909	2,462	100	17,549	20,111	23,020	216,618	283,755	14,749	5,082	20,973	541,177
1990	167,900	122,010	12,168	5,176	9,224	316,478	2,410	3,675	0	27,537	31,212	33,622	173,985	149,547	12,168	5,176	9,224	350,100
1991	145,524	230,852	23,366	0	3,936	403,678	1,576	2,438	0	31,404	33,842	35,418	149,538	262,256	23,366	0	3,936	439,096
1992	107,602	15,721	3,301	0	1,407	128,031	1,935	304	0	18,576	18,880	20,815	109,841	34,297	3,301	0	1,407	148,846
1993	76,762	0	0	163	0	76,925	1,668	4,660	0	7,762	12,422	14,090	83,090	7,762	0	163	0	91,015
1994	123,218	3,631	4,368	0	0	131,217	2,654	5,319	0	30,035	35,354	38,008	131,191	33,666	4,368	0	0	169,225
1995	130,506	250,733	32,324	863	1,121	415,547	5,489	1,099	0	39,012	40,111	45,600	137,094	289,745	32,324	863	1,121	461,147
1996	128,866	86,342	17,288	356	1,717	236,569	3,025	1,260	0	20,069	21,329	24,354	133,151	108,411	17,288	356	1,717	260,923
Ave. Harvest:																		
1961-1995	116,722	100,187	12,672	205	1,293	231,080	2,664	2,764	0	25,358	28,122	30,786	122,151	126,545	12,672	205	1,293	261,866
1986-1995	162,031	116,192	9,408			287,486	2,050	2,766	80	25,419	28,266	30,316	166,926	141,611	9,408			327,802

[1] Subsistence harvest estimates not available by district until 1978. Subsistence harvests prior to 1977 were estimated because catches of salmon other than chinook salmon were not differentiated by species. Minimum estimates of fall chum subsistence catches for 1961-1978 because surveys were conducted prior to the end of the fishing season.

[2] Includes department test fish sales prior to 1988.

[3] From 1978 through 1988, the commercial related harvest was subtracted from the subsistence harvest in Districts 4, 5 and 6 because it was assumed that this harvest was included in the reported subsistence harvest during that time period. Beginning in 1989, subsistence surveys attempted to document subsistence only fishing catches and commercial related use separately.

[4] In Districts 4, 5 and 6, commercial related refers to the estimated number of females harvested to produce roe sold.

[5] Includes an estimated 95,768 fall chum salmon illegally sold in District 5.

[6] Includes an estimated 119,168 fall chum salmon illegally sold in District 6.

[7] Includes Alaskan subsistence harvest and Canadian Domestic and Aboriginal harvests.

Appendix A.22. Yukon River coho salmon total utilization in numbers of fish, by district, area, and country, 1961-1996.[a]

	District 1					District 2				District 3			Lower Yukon Area Subtotals				
Year	Subsist	Comm[b]	Personal Use	ADF&G Test Fish	Total	Subsist	Comm[b]	ADF&G Test Fish	Total	Subsist	Comm	Total	Subsist	Comm	Personal Use	ADF&G Test Fish	Total
1961		2,855			2,855		0		0		0	0		2,855			2,855
1962		22,926			22,926		0		0		0	0		22,926			22,926
1963		5,572			5,572		0		0		0	0		5,572			5,572
1964		2,446			2,446		0		0		0	0		2,446			2,446
1965		350			350		0		0		0	0		350			350
1966		19,254			19,254		0		0		0	0		19,254			19,254
1967		9,925			9,925		0		0		1,122	1,122		11,047			11,047
1968		13,153			13,153		0		0		150	150		13,303			13,303
1969		13,989			13,989		0		0		1,009	1,009		14,998			14,998
1970		12,632			12,632		0		0		0	0		12,632			12,632
1971		12,165			12,165		0		0		0	0		12,165			12,165
1972		21,705			21,705		506		506		0	0		22,211			22,211
1973		34,860			34,860		1,781		1,781		0	0		36,641			36,641
1974		13,713			13,713		176		176		0	0		13,889			13,889
1975		2,288			2,288		200		200		0	0		2,488			2,488
1976		4,064			4,064		17		17		0	0		4,081			4,081
1977		31,720			31,720		5,319		5,319		538	538		37,577			37,577
1978	1,142	16,460			17,602	598	5,835		6,433	223	758	981	1,963	23,053			25,016
1979	3,184	11,369			14,553	1,132	2,850		3,982	74	0	74	4,390	14,219			18,609
1980	1,808	4,829			6,637	4,801	2,660		7,461	91	0	91	6,700	7,489			14,189
1981	3,769	13,129			16,898	3,736	7,848		11,584	510	419	929	8,015	21,396			29,411
1982	11,192	15,115			26,307	10,229	14,179		24,408	675	87	762	22,096	29,381			51,477
1983	3,590	4,595			8,185	6,072	2,557		8,629	917	0	917	10,579	7,152			17,731
1984	6,095	29,472			35,567	7,066	43,064		50,130	740	621	1,361	13,901	73,157			87,058
1985	3,246	27,676			30,922	4,834	17,125		21,959	376	171	547	8,456	44,972			53,428
1986	2,725	24,824			27,549	9,140	21,197		30,337	954	793	1,747	12,819	46,814			59,633
1987	6,396	0	0		6,396	6,894	0		6,894	754	0	754	14,044	0	0		14,044
1988	4,389	36,028	0	407	40,824	7,104	34,758	18	41,880	1,667	1,419	3,086	13,160	72,205	0	425	85,790
1989	5,077	22,987	59	1,685	29,808	5,039	38,402	120	43,561	537	3,988	4,525	10,653	65,377	59	1,805	77,894
1990	3,301	12,160	8	1,194	16,663	6,344	16,405	30	22,779	1,026	918	1,944	10,671	29,483	8	1,224	41,386
1991	1,808	54,095		2,094	57,997	3,297	40,898	86	44,281	1,340	1,905	3,245	6,445	96,898		2,180	105,523
1992	5,426	0		0	5,426	6,587	0	0	6,587	1,549	0	1,549	13,562	0		0	13,562
1993	2,343	0		0	2,343	1,695	0	0	1,695	279	0	279	4,317	0		0	4,317
1994	3,272	0		0	3,272	3,881	0	0	3,881	363	0	363	7,516	0		0	7,516
1995	2,251	21,625		193	24,069	2,142	18,488	0	20,630	891	0	891	5,284	40,113		193	45,590
1996	2,445	27,705		1,728	31,878	3,475	20,974	0	24,449	444	0	444	6,364	48,679		1,728	56,771
Ave. Harvest:																	
1991-199	3,020	15,144		457	18,621	3,520	11,877	17	15,415	884	381	1,265	7,425	27,402		475	35,302
1986-199	3,699	17,172			21,435	5,212	17,015		22,253	936	902	1,838	9,847	35,089			45,526

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Year	District 4 Subsist	Comm	Comm-Related [c]	Total	District 5 Subsist	Comm	Comm-Related [c]	Personal Use	Total	District 5 Subsist	Comm	Comm-Related [c]	Personal Use	ADF&G Test Fish	Total	Upper Yukon Area Subtotals Subsist	Comm	Comm-Related [c]	Personal Use	ADF&G Test Fish	Total
1961																					
1962																					
1963																					
1964																					
1965																					
1966																					
1967																					
1968																					
1969																	95	0			95
1970																	556	0			556
1971																	38	0			38
1972																	22	0			22
1973																	0	0			0
1974		0	0			1,409	0		1,409		1,479	0			1,479		2,888	0			2,888
1975		0	0			5	0		5		53	0			53		58	0			58
1976		0	0			0	0		0		1,103	0			1,103		1,103	0			1,103
1977		0	0			2	0		2		1,284	0			1,284		1,286	0			1,286
1978	145	32	0	177	970	1	0		971	4,709	3,066	0			7,775	5,824	3,099	0			8,923
1979	197	155	0	352	595	0	0		595	4,612	2,791	0			7,403	5,404	2,946	0			8,350
1980	7,734	30	0	7,764	561	0	0		561	5,163	1,226	0			6,389	13,458	1,256	0			14,714
1981	2,239	0	0	2,239	1,713	0	0		1,713	9,261	2,284	0			11,545	13,213	2,284	0			15,497
1982	2,952	15	0	2,967	3,428	0	0		3,428	7,418	7,780	0			15,198	13,798	7,795	0			21,593
1983	3,946	0	0	3,946	2,448	0	0		2,448	6,932	6,168	0			13,100	13,326	6,168	0			19,494
1984	2,867	1,095	0	3,962	17,467	0	0		17,467	14,785	7,688	0			22,473	35,119	8,783	0			43,902
1985	3,949	938	0	4,887	8,098	0	0		8,098	11,761	11,762	0			23,523	23,808	12,700	0			36,508
1986	2,458	0	0	2,458	5,870	0	0		5,870	13,321	441	0			13,762	21,649	441	0			22,090
1987	3,479	0	0	3,479	11,842 [d]	0	0	58	11,900	53,006 [f]	0	0	2,465		55,471	68,327	0	0	2,523		70,850
1988	4,714	2	0	4,716	19,755	8	0	103	19,866	30,201	13,972	0	1,147	13,295	58,615	54,670	13,982	0	1,250	13,295	83,197
1989	4,030	3	0	4,033	7,187	84	0	82	7,353	18,841	16,084	0	731	2,140	37,796	30,058	16,171	0	813	2,140	49,182
1990	3,614	0	0	3,614	11,562	0	0	18	11,580	17,613	11,549	3,255	1,155	1,426	34,996	32,789	11,549	3,255	1,173	1,426	50,192
1991	4,451	14	0	4,465	4,931	0	0		4,931	21,561	8,268	3,506	0	791	32,126	30,943	8,282	3,506	0	791	41,522
1992	8,429	0	0	8,429	12,376	0	0		12,376	17,554	6,556	1,423	0	1,629	27,162	38,359	6,556	1,423	0	1,629	47,967
1993	1,167	0	0	1,167	5,984	0	0		5,984	4,304	0	0	0	0	4,304	11,455	0	0	0	0	11,455
1994	3,515	0	0	3,515	4,174	0	0		4,174	29,389	120	4,331	0	0	33,840	37,078	120	4,331	0	0	41,529
1995	1,934	0	0	1,934	2,205	0	0		2,205	18,802	5,826	1,074	417	0	26,119	22,941	5,826	1,074	417	0	30,258
1996	2,467	161	0	2,628	6,588	0	0		6,588	14,893	3,803	3,339	198	0	22,233	23,948	3,964	3,339	198	0	31,449
Ave. Harvest:																					
1991-1995	3,899	3	0	3,902	5,934	0	0		5,934	18,322	3,754	2,067	83	484	24,710	28,155	3,757	2,067	83	484	34,546
1986-1995	3,779	2	0	3,781	6,589	9	0		6,624	22,459	6,082	1,359			32,419	34,827	6,093				44,824

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	Alaska Yukon Area Totals							Canadian Totals						Yukon Drainage (Alaska/Canada) Totals						
									Mainstem Yukon River											
Year	Subsist	Comm	Comm-Related [c]	Personal Use	ADF&G Test Fish	Sport Fish [g]	Total	Old Crow Aboriginal	Aboriginal	Domestic	Comm	Total	Total	Subsist or Non-Comm h	Comm	Comm-Related [f]	Personal Use	ADF&G Test Fish	Sport Fish	Total
1961	9,192	2,855	0				12,047							9,192	2,855	0				12,047
1962	9,480	22,926	0				32,406							9,480	22,926	0				32,406
1963	27,699	5,572	0				33,271							27,699	5,572	0				33,271
1964	12,187	2,446	0				14,633							12,187	2,446	0				14,633
1965	11,789	350	0				12,139							11,789	350	0				12,139
1966	13,192	19,254	0				32,446							13,192	19,254	0				32,446
1967	17,164	11,047	0				28,211							17,164	11,047	0				28,211
1968	11,613	13,303	0				24,916							11,613	13,303	0				24,916
1969	7,776	15,093	0				22,869							7,776	15,093	0				22,869
1970	3,966	13,188	0				17,154							3,966	13,188	0				17,154
1971	16,912	12,203	0				29,115							16,912	12,203	0				29,115
1972	7,532	22,233	0				29,765							7,532	22,233	0				29,765
1973	10,236	36,641	0				46,877							10,236	36,641	0				46,877
1974	11,646	16,777	0				28,423							11,646	16,777	0				28,423
1975	20,708	2,546	0				23,254							20,708	2,546	0				23,254
1976	5,241	5,184	0				10,425							5,241	5,184	0				10,425
1977	16,333	38,863	0			112	55,308							16,333	38,863	0			112	55,308
1978	7,787	26,152	0			302	34,241							7,787	26,152	0			302	34,241
1979	9,794	17,165	0			50	27,009							9,794	17,165	0			50	27,009
1980	20,158	8,745	0			67	28,970	1,500				0	1,500	21,658	8,745	0			67	30,470
1981	21,228	23,680	0			45	44,953	500				0	500	21,728	23,680	0			45	45,453
1982	35,894	37,176	0			97	73,167					0	0	35,894	37,176	0			97	73,167
1983	23,905	13,320	0			199	37,424					0	0	23,905	13,320	0			199	37,424
1984	49,020	81,940	0			831	131,791	500				0	500	49,520	81,940	0			831	132,291
1985	32,264	57,672	0			808	90,744	250				0	250	32,514	57,672	0			808	90,994
1986	34,468	47,255	0			1,535	83,258	300				0	300	34,768	47,255	0			1,535	83,558
1987	82,371	0	0	2,523		1,292	86,186	306				0	306	82,677	0	0	2,523		1,292	86,492
1988	67,830	86,187	0	1,250	13,720	2,420	171,407	350				0	350	68,180	86,187	0	1,250	13,720	2,420	171,757
1989	40,711	81,548	0	872	3,945	1,811	128,887	470				0	470	41,181	81,548	0	872	3,945	1,811	129,357
1990	43,460	41,032	3,255	1,181	2,650	1,947	93,525	680				0	680	44,140	41,032	3,255	1,181	2,650	1,947	94,205
1991	37,388	103,180	3,506	0	2,971	2,775	149,820	235				0	235	37,623	103,180	3,506	0	2,971	2,775	150,055
1992	51,921	6,556	1,423	0	1,629	1,666	63,195	495				0	495	52,416	6,556	1,423	0	1,629	1,666	63,690
1993	15,772	0	0	0	0	897	16,669	60				0	60	15,832	0	0	0	0	897	16,729
1994	44,594	120	4,331	0	0	2,174	51,219	332			2	2	334	44,926	122	4,331	0	0	2,174	51,553
1995	28,225	45,939	1,074	417	193	1,278	77,126	509				0	509	28,734	45,939	1,074	417	193	1,278	77,635
1996	30,312	52,643	3,339	198	1,728	1,588	89,808	41				0	41	30,353	52,643	3,339	198	1,728	1,588	89,849
Ave. Harvest:																				
1991-1995	35,580	31,159	2,067	83	959	1,758	71,606	326				0	327	35,906	31,159	2,067	83	959	1,758	71,932
1986-1995	44,674	41,182	1,359			1,780	92,129	374				0	374	45,048	41,182	1,359			1,780	92,503

[a] Subsistence harvest estimates not available by district until 1978. Subsistence harvests prior to 1977 were estimated because catches of salmon other than chinook salmon were not differentiated by species. Minimum estimates of coho subsistence catches for 1961-1978 because surveys were conducted prior to the end of the fishing season. ADF&G test fish is the number of fish sold by test fisheries.

[b] Includes department test fish sales prior to 1988.

[c] In Districts 4, 5 and 6, commercial related refers to the estimated number of females harvested to produce roe sold.

[d] Includes an estimated 5,015 coho salmon illegally sold in District 5.

[f] Includes an estimated 31,276 coho salmon illegally sold in District 6.

[g] Estimated sport fish harvest for Alaskan portion of the Yukon River drainage. A majority of the sport fish harvest occurs in the Tanana River drainage (District 6).

[h] Includes Alaskan subsistence harvest and Canadian Aboriginal harvest.

Appendix A.23. Percent age composition of combined commercial and subsistence salmon harvest, Yukon River drainage, 1982-1996. [a]

Species	Year	Sample Size	Age in Years (Percent of Total) 3	4	5	6	7	8	Total
Chinook Salmon	1982	3,795	0.2	6.8	18.5	58.3	15.9	0.3	100.0
	1983	3,801	0.0	6.6	21.0	62.9	9.4	0.0	100.0
	1984	3,700	0.0	3.7	27.0	56.0	13.1	0.1	100.0
	1985	4,567	0.1	5.7	13.2	69.4	11.3	0.3	100.0
	1986	5,785	0.3	3.9	27.2	42.8	25.1	0.6	100.0
	1987	5,300	0.0	4.2	8.4	72.5	14.5	0.3	100.0
	1988	5,108	0.1	14.8	22.8	31.5	29.4	1.4	100.0
	1989	3,901	0.5	7.2	30.3	51.1	10.2	0.6	99.9
	1990	3,416	0.0	17.2	26.9	49.4	6.3	0.2	100.0
	1991	3,679	0.0	5.8	45.1	42.6	6.4	0.1	100.0
	1992	3,772	0.1	8.1	20.1	68.6	3.1	0.0	100.0
	1993	4,034	0.2	15.8	25.4	50.5	8.0	0.0	100.0
	1994	3,692	0.3	4.1	47.2	44.5	3.8	0.0	99.9
	1995 [b]	4,447	0.1	8.5	14.1	74.1	3.3	0.0	100.1
	1996 [b]	4,591	0.3	1.8	41.9	35.0	20.6	0.3	99.9
Summer Chum Salmon	1982	3,419	2.0	61.2	34.4	2.4			100.0
	1983	4,110	1.0	53.8	44.4	0.8			100.0
	1984	2,722	2.0	73.7	23.9	0.5			100.0
	1985	2,472	1.4	68.6	29.2	0.8			100.0
	1986	3,473	0.1	29.1	69.8	1.0			100.0
	1987	2,184	0.4	60.8	31.8	6.9			100.0
	1988	5,112	0.0	70.1	29.1	0.8			100.0
	1989	3,778	0.4	38.7	60.5	0.4			100.0
	1990	3,155	0.4	38.3	58.9	2.4			100.0
	1991	5,015	1.3	48.0	49.8	0.9			100.0
	1992	4,303	0.2	31.0	65.0	3.8			100.0
	1993	2,011	0.4	47.5	47.7	4.5			100.1
	1994	3,820	0.1	51.3	46.6	2.0			100.0
	1995 [b]	6,583	0.6	48.8	47.4	3.2			100.0
	1996 [b]	5,746	0.2	45.9	50.1	3.7	0.1		100.0
Fall Chum Salmon	1982	2,918	6.5	58.6	34.5	0.3			100.0
	1983	1,735	0.7	91.4	8.0	0.0			100.0
	1984	1,902	6.6	55.6	37.5	0.4			100.0
	1985	2,801	5.2	83.4	11.0	0.4			100.0
	1986	1,715	7.4	89.6	2.5	0.5			100.0
	1987	1,513	5.0	77.1	17.5	0.4			100.0
	1988	4,030	4.1	45.7	46.6	3.5			99.9
	1989	4,939	1.0	87.0	11.8	0.2			100.0
	1990	2,351	2.8	74.9	21.7	0.6			100.0
	1991	5,314	2.7	75.4	21.7	0.2			100.0
	1992	3,069	1.2	45.9	51.8	1.1			100.0
	1993	1,616	0.1	62.8	35.2	1.8			99.9
	1994	1,295	2.4	66.4	31.1	0.1			100.0
	1995 [b]	1,731	0.6	63.8	33.4	2.3			100.1
	1996 [b]	1,049	0.2	59.0	38.0	2.8			100.0
Coho Salmon	1982	320	4.1	87.3	8.6				100.0
	1983	121	4.1	91.7	4.1				100.0
	1984	619	12.9	73.7	13.4				100.0
	1985	462	14.1	76.3	9.6				100.0
	1986	491	2.2	88.6	9.2				100.0
	1987	0							0.0
	1988	1,091	12.2	85.5	2.3				100.0
	1989	749	20.0	74.5	5.5				100.0
	1990	428	28.9	67.1	3.9				99.9
	1991	615	8.3	91.6	0.1				100.0
	1992	920	24.1	74.4	1.6				100.1
	1993	522	15.5	83.5	1.0				100.0
	1994	752	22.9	76.2	0.9				100.0
	1995 [b]	664	41.7	58.0	0.3				100.0
	1996 [b]	576	13.4	83.9	2.8				100.1

[a] Age composition estimated from samples collected from each gear type, by district and fishery, or from samples from adjacent fisheries and/or test fisheries of the same gear type. Fisheries for which no appropriate samples were available were not apportioned to age.

[b] Preliminary data based on pooled samples not weighted by harvest.

Appendix A.24. Percent of total Yukon River chinook salmon harvest (Alaska and Canada combined) attributed to region of origin, 1982-1996. [a]

Year	Lower River Stocks (U.S) [b]	Middle River Stocks (U.S) [c]	Canadian-Spawned Stocks	Total
1982	15	23	62	100
1983	12	39	49	100
1984	29	36	35	100
1985	31	20	49	100
1986	26	6	68	100
1987	17	19	64	100
1988	27	12	61	100
1989	26	16	58	100
1990	19	22	59	100
1991	26	28	46	100
1992	18	23	59	100
1993	22	13	65	100
1994	16	24	60	100
1995	12	13	75	100
1996	31	7	62	100
5-Year Ave. 1991-1995	19	20	61	100
10-Year Ave. 1986-1995	21	18	62	100

[a] Based on analysis of chinook salmon scale patterns, age composition, and geographic distribution of harvests and escapements.

[b] Lower River stocks include tributary streams that drain the Andreafsky Hills and Kaltag Mountains between rivermiles 100 and 500.

[c] Middle River stocks include the Upper Koyukuk River and Tanana River tributaries.

Appendix A.25. Selected environmental and salmon catch information, Yukon River, 1961-1996.

Year	Average Nome April Air Temp. (°F)	Tanana River Nenana Ice Breakup	Iceout Yukon Delta Area	First Chinook Caught Kuskokwim River [b]	First Chinook Caught Yukon Delta Area [b]	First Summer Chum Caught Delta Area [b]	First District 1 Commercial period	First Summer Chum Caught Delta Area [b]
1961	18	5/05	[a]	[a]	6/05	[a]	6/05	[a]
1962	18	5/12	6/10	[a]	6/07 [c]	[a]	6/11	[a]
1963	18	5/05	5/29	[a]	[a]	[a]	6/03	[a]
1964	13	5/20	>6/12	[a]	[a]	[a]	6/15	[a]
1965	20	5/07	6/01	5/31	6/06	[a]	6/07	[a]
1966	15	5/08	6/06	5/27 [g]	6/09	[a]	6/10	[a]
1967	23	5/04	[a]	5/20	5/20	5/30	6/02	5/30
1968	14	5/08	[a]	5/26	[a]	6/05	6/03	6/05
1969	22	4/28	5/25	5/23	5/26	6/02	6/02	6/02
1970	15	5/04	late May	5/21	6/06	6/05	6/06	6/05
1971	13	5/08	6/05	6/06	6/11	6/15	6/11	6/15
1972	12	5/10	6/03	6/05	6/09	6/11	6/09	6/11
1973	18	5/04	6/01	5/27	5/30 [d]	6/05	6/05	6/05
1974	21	5/06	late May	5/23	5/27	6/01	6/03	6/01
1975	13	5/10	6/01	5/26	6/01	6/13	6/09	6/13
1976	10	5/02	6/01	6/01	6/12	6/13	6/14	6/13
1977	9	5/06	6/01	5/31	6/09	6/11	6/11	6/11
1978	25	4/30	5/20	5/18	5/26	5/26	6/08	5/26
1979	26	4/30	5/20	5/16	5/24	5/28	6/04	5/28
1980	24	4/29	5/19	5/17	5/27 [e]	5/31	6/09	5/31
1981	24	4/30	5/18	5/22	5/25	5/28	6/05	5/28
1982	12	5/10	6/02	6/01	6/06	6/06	6/14	6/06
1983	25	4/29	5/21	5/23	5/25	5/30	6/09	5/30
1984	12	5/09	6/01	5/25	6/02 [f]	6/08	6/18	6/08
1985	1	5/11	6/05	6/03	6/14	6/16	6/24	6/16
1986	12	5/08	6/01	5/29	6/06	6/07	6/14 [h]	6/07
1987	19	5/05	5/31	5/24	5/31	6/04	6/15	6/04
1988	23	4/27	5/20	5/16	5/27	5/27	6/09 [h]	5/27
1989	25	5/01	5/31	5/25	5/29 [i]	6/03	6/13 [h]	6/03
1990	26	4/23	5/28	5/22	5/29	5/31	6/14	5/31
1991	25	5/01	5/24	5/20	5/29	5/29	6/13	5/29
1992	22 [j]	5/14	5/30 [k]	5/23	6/13	6/13	6/20	6/13
1993	28	4/24	5/19	5/19	5/26	5/28	6/14	5/28
1994	20	4/29	5/22	5/16	5/24	5/28	6/13	5/28
1995	26	4/26	5/18	5/15	5/24	5/26	6/12	5/26
1996	21	5/05	5/19	[a]	5/24	5/28	6/10	5/24

[a] Information not available.
[b] Subsistence or test net fishery.
[c] Caught 6/09 Mt. Village, back calculated arrival date to mouth.
[d] Caught 6/03 Pilot Station, back calculated arrival date to mouth.
[e] Caught 5/23 Marshall, back calculated arrival date to mouth.
[f] Caught 6/05 Pitkas Point, back calculated arrival date to mouth.
[g] Caught 6/01 Kaiskag, back calculated arrival date to mouth.
[h] Special six inch maximum mesh size fishing period.
[i] Caught 6/01 St. Marys, back calculated arrival date to mouth.
[j] Average May air temperature was 8.2 degrees fahrenheit below normal.
[k] The mainstem Yukon River was ice free on this date, but ice remained along the coast until June 10.

Appendix A.26. Total catch and estimated catch of Western Alaska (including Canadian Yukon) chinook salmon (in thousands of fish) taken in Japanese high seas salmon gillnet fisheries and total catch of chinook salmon taken in foreign and joint-venture trawl fisheries, 1964-1996.

	Japanese Mothership Gillnet		Japanese Landbased Driftnet		Japanese Total Gillnet		Bering Sea-Aleutian Area Trawl				Gulf of Alaska Trawl		
								Joint Venture	U.S.			Joint Venture/U.S.	
Year	Western Alaska Origin	Total	Western Alaska Origin	Total	Western Alaska Origin	Total	Foreign	Groundfish [d]	Domestic	Total	Foreign	Groundfish [e]	Total
1964	179	410	40	208	219	618							
1965	106	185	20	102	126	287							
1966	108	208	22	118	130	326							
1967	71	128	22	115	93	243							
1968	244	362	18	97	262	459							
1969	367	554	17	88	384	642							
1970	312	437	28	148	340	585							
1971	132	206	27	139	159	345							
1972	189	261	20	107	209	368							
1973	56	119	31	165	87	284							
1974	208	361	36	188	244	549							
1975	108	162	20	137	128	299							
1976	117	285	42	201	159	486							
1977	55	93	31	146	86	239					[a]		
1978	36	105	63	210	99	315	39.1			39.1			
1979	69	126	45	162	114	286	100.4			100.4	16.9	1.0	17.9
1980	416	704	22	160	438	864	113.1	1.9		115.0	31.6	0.2	31.8
1981	30	88	55	190	85	278	35.9	0.3		36.2	28.6	0.0	28.6
1982	45	107	41	165	86	272	13.9	1.7		15.6	4.7	1.2	5.9
1983	31	87	44	178	75	265	9.8	0.5		10.3	5.9	3.6	9.5
1984	36	82	21	92	57	174	9.5	1.7		11.2	11.1	63.2	74.3
1985	25	66	22	100	47	167	7.1	2.5	1.5	11.1	0.3	13.6	13.9
1986	24	60	20	76	44	137	1.0	4.8	3.4	9.2	0.0	20.8	20.8
1987	20	39	[b]	74	[b]	116	1.0	8.4	12.8	22.2		0.8	0.8
1988	23	26	[b]	47	[b]	73		5.6	24.7	30.3		0.1	0.1
1989	[b]	16	[b]	51	[b]	67 [f]		8.6	31.8	40.4		6.7	6.7
1990	-	-	-	-	[b]	23 [f]			14.0	14.0		14.8	14.8
1991	-	-	-	-	[b]	45 [f]			35.8	35.8		37.6	37.6
1992 [g]									37.4	37.4		16.0	16.0
1993 [g]									46.0	46.0		24.6	24.6
1994									44.4	44.4		13.6	13.6
1995									22.5	22.5		14.6	14.6
1996									64.7	64.7		16.0	16.0

[a] Species composition unknown.
[b] Information not available.
[c] Longline harvest only, no trawling conducted in 1986.
[d] Joint-venture harvest reported through 1989 (fishery ended in 1990).
[e] Joint-venture harvest reported through 1988 when fishery ended. U.S. ground fish fishery harvest reported beginning in 1989.
[f] Japanese mothership fishery converted to "nontraditional landbased salmon fishery".
[g] U.S. fishery entirely replaced directed foreign and joint-venture groundfish harvests.

Appendix A.27. List of emergency orders pertaining to the Districts 1 - 6 chinook and summer chum salmon fishery, Yukon Area, 1996.

E.O. Number	Effective Date	Action Taken	Comments
3-LY-S-01-96	June 9	Opened the commercial salmon fishing season effective 6:00 p.m. Sunday June 9, 1996 in District 2 of the Lower Yukon Area.	Early run timing and increasing catches of chinook salmon in subsistence and test fishing catches warranted opening the commercial salmon fishing season in District 2 prior to District 1.
3-LY-S-02-96	June 9	Established a 6-hour fishing period and allowed the taking of salmon for commercial purposes with unrestricted mesh size gillnets from 6:00 p.m. Sunday June 9 until 12 midnight Sunday June 9 in District 2 of the Lower Yukon Area.	Based on early run timing and increasing subsistence and test fishing catches of chinook and summer chum salmon, a 6-hour commercial fishing period with unrestricted mesh size gillnets was allowed in District 2. Because District 1 normally is opened to fishing prior to District 2, fishing time was less than 12 hours.
3-LY-S-03-96	June 10	Opened the commercial salmon fishing season effective 6:00 p.m. Monday June 10, 1996 in District 1 of the Lower Yukon Area.	Early run timing and increasing catches of chinook salmon in subsistence and test fishing catches warranted opening the commercial salmon fishing season in District 1.
3-LY-S-04-96	June 10	Established a 12-hour fishing period and allowed the taking of salmon for commercial purposes with unrestricted mesh size gillnets from 6:00 p.m. Monday June 10 until 6:00 a.m. Tuesday June 11 in District 1 of the Lower Yukon Area.	Based on early run timing and increasing subsistence and test fishing catches of chinook and summer chum salmon, and processor capacity a 12-hour commercial fishing period with unrestricted mesh size gillnets was allowed in District 1.
3-LY-S-05-96	June 12	Established a 12-hour fishing period and allowed the taking of salmon for commercial purposes with unrestricted mesh size gillnets from 6:00 p.m. Wednesday June 12 until 6:00 a.m. Thursday June 13 in District 2 of the Lower Yukon Area.	Test fishing data indicated early run timing for chinook salmon similar to the 1980, 1981 and 1983 runs. Summer chum salmon run timing also appears early. The chinook and summer chum salmon runs appear to be at least average in abundance.

E.O. Number	Effective Date	Action Taken	Comments
3-LY-S-06-96	June 13	Established a 12-hour fishing period and allowed the taking of salmon for commercial purposes with unrestricted mesh size gillnets from 6:00 p.m. Thursday June 13 until 6:00 a.m. Friday June 14 in District 1 of the Lower Yukon Area.	The estimated commercial harvest was 21,000 chinook and 15,000 summer chum salmon through June 11. Based on test fishing CPUE data, chinook salmon abundance was judged to be at least average.
3-LY-S-07-96	June 16	Established a 12-hour fishing period and allowed the taking of salmon for commercial purposes with unrestricted mesh size gillnets from 6:00 p.m. Sunday June 16 until 6:00 a.m. Monday June 17 in District 2 of the Lower Yukon Area.	The estimated commercial harvest was 37,000 chinook and 34,000 summer chum salmon through June 15. Based on test fishing CPUE data, the chinook salmon run was judged to be at least average in abundance.
3-LY-S-08-96	June 17	Established a 12-hour fishing period and allowed the taking of salmon for commercial purposes with unrestricted mesh size gillnets from 6:00 p.m. Monday June 17 until 6:00 a.m. Tuesday June 18 in District 1 of the Lower Yukon Area.	The estimated commercial harvest was 37,000 chinook and 34,000 summer chum salmon through June 15. Based on test fishing CPUE data, the chinook salmon run was judged to be at least average in abundance.
3-LY-S-09-96	June 19	Established a 12-hour fishing period and allowed the taking of salmon for commercial purposes with unrestricted mesh size gillnets from 6:00 p.m. Wednesday June 19 until 6:00 a.m. Thursday June 20 in District 2 of the Lower Yukon Area.	Chinook salmon abundance appeared to be at least average. The cumulative test fishing CPUE for summer chum salmon was nearly double the highest on record. There was a lower than average return of age-6 chinook. There was no market available for a directed summer chum salmon commercial fishery.

E.O. Number	Effective Date	Action Taken	Comments
3-LY-S-10-96	June 20	Established a 12-hour fishing period and allowed the taking of salmon for commercial purposes with unrestricted mesh size gillnets from 6:00 p.m. Thursday June 20 until 6:00 a.m. Friday June 21 in District 1 of the Lower Yukon Area.	The estimated commercial harvest for Districts 1 and 2 combined was 48,000 chinook and 50,000 summer chum salmon through June 18. There was a lower than average return of age-6 chinook. Based on run timing and at least average abundance of chinook salmon a 12-hour period with unrestricted mesh size gillnets was warranted. There was no market available for a directed summer chum salmon commercial fishery.
3-LY-S-11-96	June 23	Established a 9-hour fishing period and allowed the taking of salmon for commercial purposes with unrestricted mesh size gillnets from 9:00 p.m. Sunday June 23 until 6:00 a.m. Monday June 24 in District 2 of the Lower Yukon Area.	The estimated commercial harvest for Districts 1 and 2 combined was 64,000 chinook and 82,000 summer chum salmon through June 21. Test-fishing catches of chinook salmon were relatively low from June 13 through June 18. Test-fishing catches of chinook increased on June 19 and June 20. There was a lower than average return of age-6 chinook. Based on a chinook salmon run of average abundance and to spread out the harvest, a 9-hour period with unrestricted mesh size gillnets was warranted. There was no market for a directed summer chum salmon commercial fishery.
3-LY-S-12-96	June 24	Established a12-hour fishing period and allowed the taking of salmon for commercial purposes with unrestricted mesh size gillnets from 6:00 p.m. Monday June 24 until 6:00 a.m. Tuesday June 25 in District 1 of the Lower Yukon Area.	The estimated commercial harvest for Districts 1 and 2 combined was 64,000 chinook and 82,000 summer chum salmon through June 22. Based on test fishing CPUE data, the abundance of chinook salmon appears to be near average and the abundance of summer chum salmon appears to be above average. There was no market for a directed summer chum salmon commercial fishery. There was a lower than average return of age-6 chinook. Based on early run-timing and average abundance of chinook salmon, a 12 hour commercial fishing period with unrestricted mesh size gillnets was warranted.

E.O. Number	Effective Date	Action Taken	Comments
3-LY-S-13-96	June 27	Established a 12-hour fishing period for the taking of salmon for commercial purposes with unrestricted mesh size gillnets from 6:00 p.m. Thursday June 27 until 6:00 a.m. Friday June 28 in District 1 of the Lower Yukon Area.	Based on test fishing CPUE data, the abundance of chinook salmon appeared to be near average and the abundance of summer chum salmon appeared to be above average. There was a lower than average return of age-6 chinook. A lower than expected harvest of 3,300 chinook was taken during the fifth commercial fishing period in District 2. In District 1, approximately 11,000 chinook were harvested during the fifth period on June 24 and 25. The cumulative commercial harvest for Districts 1 and 2 combined was approximately 79,000 chinook and 104,000 summer chum through June 22. There was no market available for a directed summer chum salmon commercial fishery. In order to spread out the harvest of chinook salmon, the commercial fishing period normally established on Wednesday, June 26 in District 2 was not allowed. Based on a chinook salmon run of average abundance, a 12-hour commercial fishing period with unrestricted mesh size gillnets in District 1 was warranted.
3-LY-S-14-96	July 1	Established a 6-hour fishing period and allowed the taking of salmon for commercial purposes with unrestricted mesh size gillnets from 6:00 p.m. Monday July 1 until 12:00 a.m. Monday July 1 in District 2 of the Lower Yukon Area.	The estimated commercial harvest for Districts 1 and 2 was 86,000 chinook and 121,000 summer chum through June 29. There was no market for a directed summer chum salmon commercial fishery. There was a lower than average return of age-6 chinook. It is likely that predominantly lower-river chinook salmon stocks will be present at this stage of the run. Based on a chinook salmon run of average abundance and in order to spread out the harvest, a 6-hour commercial fishing period with unrestricted mesh size gillnets was warranted in District 2.

E.O. Number	Effective Date	Action Taken	Comments
3-LY-S-15-96	July 5	Opened the commercial salmon fishing season effective 6:00 p.m. Friday, July 5, 1996 in District 3 of the Lower Yukon Area. In addition, established a 6-hour commercial fishing period and allowed the taking of salmon with gillnets of six-inch or smaller mesh size from 6:00 p.m. Friday July 5, 1996, until 12:00 midnight Friday, July 5, 1996 in District 3 of the Lower Yukon Area.	Based on test fishing CPUE data, the abundance of summer chum salmon appeared to be above average. There was no market available for a directed summer chum salmon commercial fishery in the Lower Yukon Area, and only 123,000 summer chum salmon were harvested in Districts 1 and 2. No commercial fishing had occurred in District 3 so far this season due to declining salmon flesh markets. However, based on interest from fishers and buyers for a commercial fishery for roe, opening the commercial fishing season in District 3 and allowing a 6-hour commercial fishing period with gillnets restricted to six-inch or smaller mesh size was warranted.
3-LY-S-16-96	July 12	Established a 12-hour commercial fishing period and allowed the taking of salmon for commercial purposes only with gillnets of six inch or smaller mesh size from 6:00 p.m. Friday July 12 until 6:00 a.m. Saturday July 13 in District 3 of the Lower Yukon Area.	The estimated commercial harvest for District 3 was 1,300 summer chum salmon, with 800 pounds of roe being sold. The guideline harvest range is 6,000 to 19,000 summer chum salmon in this district. Based on a summer chum run of above average abundance, a 12-hour commercial fishing period with gillnets restricted to six inch or smaller mesh size was warranted.

E.O. Number	Effective Date	Action Taken	Comments
3-UY-01-96	June 10	Opened the Subdistrict 4-A subsistence drift gillnet salmon fishing season earlier than normal.	Upstream from Stink Creek king salmon may be taken by drift gillnets from June 10 through July 14, and chum salmon may be taken by drift gillnets after August 2; downstream from Stink Creek king salmon may be taken by drift gillnets from June 10 through July 14. The king salmon run appeared to be approximately one week earlier than recent years' migrational timing.
3-UY-02-96	June 16	Allowed uninterrupted subsistence salmon fishing in Subdistricts 4-B and 4-C from Friday June 16, until 24 hours prior to the opening of the commercial salmon fishing season.	In Subdistricts 4-B and 4-C the subsistence fishing schedule is altered by regulation on June 15. Normally on June 15, the subsistence fishing schedule is altered to two 48-hour periods per week coinciding with the commercial salmon fishing season.
3-UY-03-96	June 23	Opened the commercial salmon fishing season effective 6:00 p.m. Sunday June 23, 1996 in Subdistrict 4-A.	Based on department test net catches, subsistence harvest reports and commercial catches in Districts 1 and 2, summer chum salmon run strength appeared to be above average with early run timing. Escapement and subsistence needs were expected to be achieved.
3-UY-04-96	June 23	Established three 12-hour commercial salmon fishing periods in Subdistrict 4-A. Salmon may be taken from 6:00 p.m. Sunday June 23, until 6:00 a.m. Monday June 24, from 6:00 p.m. Tuesday June 25, until 6:00 a.m. Wednesday June 26, and from 6:00 p.m. Thursday June 27, until 6:00 a.m. Friday June 28, 1996.	Based on department test net catches, subsistence harvest reports and commercial catches in Districts 1 and 2, summer chum salmon run strength appeared to be above average with early run timing. Escapement and subsistence needs were expected to be achieved.

E.O. Number	Effective Date	Action Taken	Comments
3-UY-05-96	June 23	Opened the Subdistrict 4-B and 4-C commercial salmon fishing season and established a schedule of two 48-hour commercial salmon fishing periods per week.	Based on department test net catches, subsistence harvest reports and commercial catches in Districts 1 and 2, and preliminary escapement monitoring project information, chinook salmon run strength appeared to be average and summer chum salmon run strength appeared to be above average. Additionally, run timing for both species appeared to be earlier than average. Escapement and subsistence needs were expected to be achieved.
3-UY-06-96	June 23	Opened the lower 12 miles of the Anvik river for commercial fishing and established three 12-hour commercial salmon fishing periods. Salmon may be taken from 6:00 p.m. Sunday, June 23 until 6:00 a.m. Monday, June 24, from 6:00 p.m. Tuesday, June 25 until 6:00 a.m. Wednesday, June 26, and from 6:00 p.m. Thursday, June 27 until 6:00 a.m. Friday, June 28.	Based on department test net catches, subsistence harvest reports, commercial catches in Districts 1 and 2, and initial escapement project information, summer chum salmon run strength appeared to be above average and run timing earlier than average. In 2.5 days the Anvik River sonar project counted 31,570 summer chum salmon through June 20. This was the largest escapement estimate for this date. Escapement needs were expected to be achieved.
3-UY-07-96	July 22	Added 6 additional hours to three subsistence salmon fishing periods in Subdistrict 4-A. Salmon may be taken for subsistence from 6:00 p.m. Saturday, June 22 until 12:00 midnight Saturday, June 22, from 12:00 a.m. Tuesday, June 25 until 6:00 a.m. Tuesday, June 25, and from 12:00 a.m. Thursday, June 27 until 6:00 a.m. Thursday, June 27.	Based on department test net catches, subsistence harvest reports and commercial catches in Districts 1 and 2, and preliminary escapement monitoring project information, chinook salmon run strength appeared to be average and summer chum salmon run strength appeared to be above average. Escapement needs were expected to be achieved. The public indicated that additional subsistence fishing time was needed between commercial fishing periods to meet their subsistence requirements.

E.O. Number	Effective Date	Action Taken	Comments
3-UY-08-96	June 25	Opened the Subdistricts 5-A, 5-B, and 5-C commercial salmon fishing season and established the first commercial salmon fishing period. The first fishing period was a 36-hour period from 6:00 p.m. Wednesday, June 26, until 6:00 a.m. Friday, June 28, 1996.	Based on department test net catches, subsistence harvest reports and commercial catches and preliminary escapement monitoring project information, the chinook salmon run strength appeared to be average and summer chum salmon run strength appeared to be above average. Additionally, the run timing for both species appeared to be earlier than average. Escapement and subsistence needs were expected to be achieved.
3-UY-09-96	June 28	Established an additional 36-hour subsistence only fishing period during the commercial salmon fishing season in Subdistricts 5-A, 5-B, and 5-C from 6:00 p.m. Friday June 28 until 6:00 a.m. Sunday June 30, 1996.	Based on department test net catches, subsistence harvest reports and commercial catches and preliminary escapement monitoring project information, chinook salmon run strength appeared to be average. Additionally, run timing appeared to be earlier than average. While assessing verbal processor reports from the first commercial period the department allowed an additional subsistence only fishing period to assist fishermen in meeting their subsistence needs.
3-UY-10-96	July 2	Opened the Subdistrict 5-D, commercial salmon fishing season 6:00 p.m. Tuesday July 2, 1996. Established a schedule of two 36-hour fishing periods per week. Salmon may be taken from 6:00 p.m. Tuesdays until 6:00 a.m. Thursdays, and from 6:00 p.m. Fridays until 6:00 a.m. Sundays.	Based on department test net catches, subsistence harvest reports and commercial catches and preliminary escapement monitoring project information, chinook salmon run strength appeared to be average and summer chum salmon run strength appeared to be above average. Additionally, run timing for both species appeared to be earlier than average. Escapement and subsistence needs were expected to be achieved.

E.O. Number	Effective Date	Action Taken	Comments
3-UY-11-96	June 30	Established a schedule of one 48-hour commercial salmon fishing period per week in Subdistricts 4-B and 4-C. Salmon may be taken from 6:00 p.m. Wednesdays, until 6:00 p.m. Fridays.	The Department was targeting the midpoint of the District 4 chinook salmon guideline harvest range of 2,250 to 2,850 fish. Concurrently the department was targeting the upper end of the summer chum salmon guideline harvest range of 16,000 to 47,000 fish in Subdistricts 4-B and 4-C. The estimated harvest was 41 chinook salmon and 47,934 summer chum salmon. Escapement and subsistence needs were expected to be achieved. To cautiously continue fishing for summer chum salmon, the commercial fishing time was reduced to one period per week.
3-UY-12-96	June 30	Established two 18-hour commercial salmon fishing periods in Subdistrict 4-A. Salmon may be taken from 6:00 p.m. Sunday, June 30 until 12:00 p.m. Monday, July 1 and from 6:00 p.m. Thursday, July 4 until 12:00 p.m. Friday, July 5, 1996.	Based on department test net catches, subsistence harvest reports and commercial catches and preliminary escapement monitoring project information, chinook salmon run strength appeared to be average and summer chum salmon run strength appeared to be above average. Additionally, the run timing for both species appeared to be earlier than average. Escapement needs were expected to be achieved. To provide subsistence fishers with more opportunity to subsistence fish, commercial fishing time was reduced from three 12-hour periods per week to two 18-hour fishing periods per week.

E.O. Number	Effective Date	Action Taken	Comments
3-UY-13-96	June 30	Opened the lower 12 miles of the Anvik river for commercial fishing. Established three 12-hour commercial salmon fishing periods. Salmon may be taken from 6:00 p.m. Sunday, June 30 until 6:00 a.m. Monday, July 1, from 6:00 p.m. Tuesday, July 2 until 6:00 a.m. Wednesday, July 3, and from 6:00 p.m. Thursday, July 4 until 6:00 a.m. Friday, July 5.	Based on department test net catches, subsistence harvest reports, commercial catches in Districts 1, 2 and 4, and initial escapement project information, the Yukon River summer chum salmon run strength appeared to be above average. Escapement needs were expected to be achieved. The biological escapement goal for the Anvik River is a minimum of 500,000 summer chum salmon. In ten days of counting, the Anvik River sonar project at estimated the passage of 332,068 summer chum salmon through June 27, 1996. This escapement estimate was the second largest on record for this date. Based on large test-fishing catches in the lower Yukon River from June 13 through June 27, the summer chum salmon daily passage at the Anvik River sonar project was expected to remain stable at current levels.
3-UY-14-96	June 30	Established the second commercial salmon fishing period in Subdistricts 5-A, 5-B, and 5-C. Salmon may be taken from 6:00 p.m. Sunday, June 30, until 6:00 p.m. Monday, July 1, 1996.	The chinook salmon run appeared strong early in the season but has not maintained the expected pace and the overall run size appears to be average. Based on verbal processor reports from the first 36-hour commercial fishing period, the commercial harvest to date in Subdistricts 5-A, 5-B, and 5-C was approximately 1,500 chinook salmon. The targeted harvest was the mid-point of the Subdistricts 5-A, 5-B, and 5-C guideline harvest range of 2,400 to 2,800 chinook. Escapement and subsistence needs were expected to be achieved.

E.O. Number	Effective Date	Action Taken	Comments
3-UY-15-96	July 2	Established a subsistence salmon only fishing period during the Subdistricts 5-A, 5-B, and 5-C commercial salmon fishing season. The subsistence only fishing period in Subdistricts 5-A, 5-B, and 5-C, will be a five day period from 6:00 p.m. Tuesday, July 2, until 6:00 p.m. Sunday, July 7, 1996.	Based on verbal processor reports from the first two Subdistricts 5-A, 5-B, and 5-C commercial fishing periods, approximately 1,900 chinook salmon were harvested. This harvest was below the Subdistricts 5-A, 5-B, and 5-C guideline harvest range of 2,400 to 2,800 chinook salmon. The chinook salmon run appeared strong early in the migration but had not maintained the expected pace. At this time, the overall upper Yukon River chinook salmon run size appeared to be below average. Subsistence salmon fishermen in Subdistricts 5-A, 5-B, and 5-C were concerned that continued commercial fishing would interrupt needed fishing opportunities since the commercial and subsistence periods coincide by regulation. Subsistence fishermen, from as far downstream as Subdistrict 4-A, have expressed concerns over not meeting their chinook salmon subsistence needs due to low catch rates which indicated the low chinook salmon catch rates would continue.
3-UY-16-96	July 4	Suspended the Subdistrict 5-D commercial salmon fishing schedule until further notice.	Based on processor/buyer verbal reports, approximately 150 chinook salmon were sold during the first Subdistrict 5-D commercial fishing period which ended July 4, 1996. The Subdistrict 5-D chinook salmon guideline harvest range is 300 to 500 fish. Chinook salmon were present in Subdistricts 5-D since at least June 21, and the run timing appeared unusually early. The chinook salmon catch rates were very low in the lower portion of Subdistrict 5-D. Catch rates were similar to those observed in Subdistricts 5-A, 5-B, and 5-C. The department had concerns over abundance and quality of chinook salmon in the upper Yukon River.

E.O. Number	Effective Date	Action Taken	Comments
3-UY-17-96	July 7	Established one 12-hour fishing period and allowed the taking of salmon for commercial purposes in Subdistrict 4-A from 6:00 p.m. Sunday, July 7, until 6:00 a.m. Monday, July 8, 1996.	The summer chum salmon escapement to Anvik River had exceeded the minimum objective of 500,000 fish. In addition, escapement monitoring projects on the Kaltag, Nulato, and Gisasa Rivers all indicated early run timing. Based on lower-river test-fishing catches from June 27 through July 3, the spawning escapements were anticipated to remain stable at current levels the week of July 7 through July 13. The estimated commercial harvest in Subdistrict 4-A was 125,000 pounds of summer chum salmon roe. There is a roe cap of 183,00 pounds of summer chum salmon roe for this subdistrict.
3-UY-18-96	July 7	Opened the lower 12 miles of the Anvik River to the seventh commercial fishing period. Period seven will be from 6:00 p.m. Sunday, July 7, until 6:00 a.m. Monday, July 8, 1996, a 12-hour period.	The biological escapement goal for the Anvik River is a minimum of 500,000 summer chum salmon. Through July 5, 1996, 708,265 summer chum salmon were counted. This escapement estimate was the third largest on record for this date. The estimated commercial harvest in the Anvik River Management Area was 67,000 pounds of summer chum salmon roe through July 5. There is a roe cap of 100,000 pounds of summer chum salmon roe.
3-UY-19-96	July 9	Opened the lower 12 miles of the Anvik River to the eighth commercial fishing period. Period eight will be from 6:00 p.m. Tuesday, July 9, until 6:00 a.m. Wednesday, July 10, 1996, a 12-hour period.	The biological escapement goal for the Anvik River is a minimum of 500,000 summer chum salmon. Through July 7, 1996, 792,000 summer chum salmon were counted. This escapement estimate was the fifth largest on record for this date. The estimated commercial harvest in the Anvik River Management Area was 76,000 pounds of summer chum salmon roe through July 7. There is a roe cap of 100,000 pounds of summer chum salmon roe.

E.O. Number	Effective Date	Action Taken	Comments
3-UY-20-96	July 11	Established one 18-hour commercial fishing period in Subdistrict 4-A from 6:00 p.m. Thursday, July 11, until 12:00 p.m. Friday, July 12, 1996.	Based on Department test-net catches, subsistence-harvest reports, and commercial catches, the summer chum salmon run strength appeared to be above average. The summer chum salmon escapement to Anvik River had exceeded the minimum objective of 500,000 fish. In addition, escapement monitoring projects on the Kaltag, Nulato, and Gisasa Rivers all indicate early run timing. The estimated commercial harvest in Subdistrict 4-A was 144,000 pounds of summer chum salmon roe. There is a roe cap of 183,000 pounds of summer chum roe for this subdistrict.
3-UY-21-96	July 11	Opened the lower 12 miles of the Anvik River to the ninth commercial fishing period. Period nine will be from 6:00 p.m. Thursday, July 11, until 6:00 a.m. Friday, July 12, 1996, a 12-hour period.	The estimated commercial harvest in the Anvik River Management Area was 80,000 pounds of summer chum salmon roe through July 9. There is a roe cap of 100,000 pounds of summer chum salmon roe. The biological escapement goal for the Anvik River is a minimum of 500,000 summer chum salmon. The Anvik River sonar project estimated the passage of 850,000 summer chum salmon through July 9, 1996. This escapement estimate was the fifth largest on record for this date.
3-UY-22-96	July 12	Opened the commercial salmon season in District 6 of the Tanana River. Additionally, this emergency order established a 42-hour commercial fishing period. Salmon may be taken commercially in District 6 from 6:00 p.m. Friday, July 12, until 12 noon Sunday, July 14, 1996.	Based on department test net and preliminary commercial catch statistics in the lower portions of the Yukon River, the Yukon River chinook salmon run strength appeared to be near average. The first chinook salmon was caught by a Tanana River subsistence fisherman on June 22, 1996. With initial subsistence chinook salmon needs being fulfilled, the early portion of the chinook salmon migration through the fishery and allotted for escapement, and a harvestable surplus of chinook salmon available, a chinook salmon directed commercial fishery was warranted in District 6.

E.O. Number	Effective Date	Action Taken	Comments
3-UY-23-96	July 12	Established a second commercial salmon fishing period in Subdistrict 5-D, for 36-hours. Salmon may be taken from 6:00 p.m. Friday, July 12 until 6:00 a.m. Sunday, July 14, 1996.	Based on processor/buyer verbal harvest reports, approximately 150 chinook salmon were sold during the first Subdistrict 5-D commercial fishing period which ended on July 4, 1996. The Subdistrict 5-D chinook salmon guideline harvest range is 300 to 500 fish. Chinook salmon have been present in Subdistricts 5-D since at least June 21. The Yukon River chinook salmon run timing appears unusually early this season. At this time, the target for the Subdistrict 5-D commercial harvest was to the mid-point of the guideline harvest range.
3-UY-24-96	July 14	This emergency order establishes one 18-hour fishing period and allows the taking of salmon for commercial purposes in Subdistrict 4-A of District 4 from 6:00 p.m. Sunday, July 14, until 12:00 noon Monday, July 15, 1996.	The estimated commercial harvest in Subdistrict 4-A was 161,000 pounds of summer chum salmon roe. There is a roe cap of 183,000 pounds of summer chum roe for this subdistrict. The summer chum salmon escapement to Anvik River has exceeded the minimum objective of 500,000 fish. In addition, escapement monitoring projects on the Kaltag, Nulato, and Gisasa Rivers all indicate early run timing.
3-UY-25-96	July 14	Opened the lower 12 miles of the Anvik River to the tenth commercial fishing period. Period ten will be from 6:00 p.m. Sunday, July 14, until 6:00 a.m. Monday, July 15, 1996, a 12-hour period.	The estimated commercial harvest in the Anvik River Management Area was 84,000 pounds of summer chum salmon roe through July 9. There is a roe cap of 100,000 pounds of summer chum salmon roe. The biological escapement goal for the Anvik River is a minimum of 500,000 summer chum salmon. The Anvik River sonar project estimated the passage of 891,000 summer chum salmon through July 12, 1996. This escapement estimate was the fifth largest on record for this date.

E.O. Number	Effective Date	Action Taken	Comments
3-UY-26-96	July 13	This emergency order terminated the one 48-hour commercial salmon fishing period per week schedule in Subdistricts 4-B and 4-C of the Yukon Area until further notice.	An estimated total of 137 chinook and 72,023 summer chum salmon were harvested during four commercial fishing periods in Subdistricts 4-B and 4-C. Approximately 38,000 pounds of summer chum salmon roe were sold. The chinook salmon harvest was well below the guideline harvest range. Based on the above average run size in this portion of the Yukon River, the summer chum salmon harvest was allowed to exceed the upper end of the guideline harvest range of 47,000 fish. In order to provide for adequate spawning escapements, subsistence needs, and a commercially harvestable surplus in District 6, it was warranted to close the commercial fishing season in Subdistricts 4-B and 4-C.
3-UY-27-96	July 15	This emergency order established a 42-hour commercial salmon fishing period from 6:00 p.m. Monday, July 15, until 12:00 noon Wednesday, July 17, 1996 in District 6 of the Yukon Area.	Test fishing and subsistence harvest information in the Tanana River and limited tower counts in the Chena and Salcha Rivers indicated a majority of the chinook salmon run had reached the spawning grounds, and that summer chum salmon abundance was above average. An estimated 205 chinook and 5,309 summer chum salmon were harvested during the first commercial fishing period in District 6.

E.O. Number	Effective Date	Action Taken	Comments
3-UY-28-96	July 16	Established the third commercial salmon fishing period in Subdistrict 5-D, for 36-hours. Salmon may be taken from 6:00 p.m. Tuesday, July 16 until 6:00 a.m. Thursday, July 18, 1996.	Based on Department test-net catches, subsistence-harvest reports, and commercial catches in Districts 1 and 2, the Yukon River chinook salmon run strength appeared to be near average. Based on processor/buyer verbal harvest reports, approximately 246 chinook salmon were sold to date in Subdistrict 5-D. The Subdistrict 5-D chinook salmon guideline harvest range is 300 to 500 fish. DFO reported that their catch rates indicated that the chinook salmon run into Canada was unusually early and appeared to be at least average in abundance. At this time, the targeted Subdistrict 5-D commercial harvest was near the midpoint of the guideline harvest range.
3-UY-29-96	July 19	Established a 42-hour commercial salmon fishing period from 6:00 p.m. Friday, July 19, until 12:00 noon Sunday, July 21, 1996 in District 6 of the Yukon Area..	Test fishing and subsistence harvest information in the Tanana River and limited tower counts in the Chena and Salcha Rivers indicated a majority of the chinook salmon run had reached the spawning grounds, and that summer chum salmon abundance was above average in the Tanana River. Tower counts of summer chum salmon spawning escapement in the Salcha and Chena Rivers were 29,597 and 2,514 fish respectively through July 17, which were the largest on record. An estimated 320 chinook and 11,338 summer chum salmon were harvested during the first two commercial fishing periods in District 6.

E.O. Number	Effective Date	Action Taken	Comments
3-UY-30-96	July 22	Established a 42-hour commercial salmon fishing period from 6:00 p.m. Monday, July 22, until 12:00 noon Wednesday, July 24, 1996 in District 6 of the Yukon Area.	Test fishing and subsistence harvest information in the Tanana River and limited tower counts in the Chena and Salcha Rivers indicated that summer chum salmon abundance was above average in the Tanana River. Tower counts of summer chum salmon spawning escapement in the Salcha and Chena Rivers were 35,561 and 3,114 fish respectively through July 18, which were the largest on record. The Nenana test fish wheel catch of summer chum salmon was the largest of the season on July 18. With initial subsistence salmon needs being fulfilled, the majority of the chinook salmon run past the fishery, and a harvestable surplus of summer chum salmon available, a fourth 42-hour commercial fishing period was warranted in District 6.
3-UY-31-96	July 26	Established a 42-hour commercial salmon fishing period from 6:00 p.m. Friday, July 26, until 12:00 noon Sunday, July 28, 1996 in District 6 of the Yukon Area.	Based on test fishing catches, commercial harvest, and limited tower counts in the Chena and Salcha Rivers, summer chum salmon abundance appeared to be above average in the Tanana River. As of July 25, the estimated commercial harvest was 35,000 summer chum salmon. Tower counts of summer chum salmon spawning escapement in the Salcha and Chena Rivers were 57,698 and 7,614 fish respectively through July 24, which were the largest on record. An aerial survey of the Salcha River on July 19 documented 9,722 summer chum salmon, which was the second largest on record and well above the minimum goal of 3,500 fish.

E.O. Number	Effective Date	Action Taken	Comments
3-UY-32-96	July 29	This emergency order established two 42-hour commercial salmon fishing periods from 6:00 p.m. Monday, July 29, until 12:00 noon Wednesday, July 31 and from 6:00 p.m. Friday, August 2, until 12:00 noon Sunday, August 4, 1996 in District 6 of the Yukon Area.	As of July 29, the estimated commercial harvest was 450 chinook and 40,000 summer chum salmon. An aerial survey flown on July 19 documented a total of 2,112 and 4,800 chinook salmon in the Chena and Salcha River index areas respectively. The escapement goal is greater than 1,700 chinook salmon for the Chena River and greater than 2,500 chinook salmon for the Salcha River. Based on test fishing catches, commercial harvest, and limited tower counts in the Chena and Salcha Rivers, summer chum salmon abundance appears to be above average in the Tanana River. The guideline harvest range is 13,000 to 38,000 summer chum salmon for District 6. Tower counts of summer chum salmon spawning escapement in the Salcha and Chena Rivers were 57,698 and 7,614 fish respectively through July 24, which were the largest on record. An aerial survey of the Salcha River on July 19 documented 9,722 summer chum salmon, which was the second largest on record and well above the minimum goal of 3,500 fish.

Appendix A.28. List of emergency orders pertaining to the Districts 1-6 fall season salmon fishery, Yukon Area, 1996.

E.O. Number	Effective Date	Action Taken	Comments
3-S-YF-01-96	August 6	Opened the District 1 commercial salmon fishing season and established a 6-hour commercial salmon fishing period. In addition, it established a 9-hour commercial fishing period in the "Set Net Only Area" in District 1.	Using lower Yukon River setnet test fishery, subsistence catch reports, and age composition information, it appeared that the 1996 fall chum salmon return was above preseason projection. It also appeared that the 1996 fall chum salmon return would provide for a fall chum salmon commercial harvest toward the lower end of each district's guideline harvest range (GHR). In District 1, during commercial fishing periods from 1982 to 1991 and during most commercial fishing periods in 1995, more time was given to setnet fishermen fishing in the "Set Net Only Area" than was given to set- and drift-gillnet fishermen fishing in the remainder of the district. The increased time given to "Set Net Only Area" fishermen was an attempt to compensate for the difference in efficiency between the two legal commercial gear types. This EO established a 9-hour District 1 commercial salmon fishing period in the "Set Net Only Area" as described in 5 AAC 05.330. In the remainder of District 1, a 6-hour commercial fishing period was established.
3-S-YF-02-96	August 8	Opened the District 2 commercial salmon fishing season and established a 6-hour commercial salmon fishing period.	Using the lower Yukon River setnet test fishery and subsistence catch reports, at this time it appears that the 1996 fall chum salmon return is above preseason projection. It also appears that the 1996 fall chum salmon return could provide for a fall chum salmon commercial harvest toward the lower end of each district's GHR.
3-S-YF-03-96	August 9	Established a 9-hour District 1 commercial salmon fishing period in the "Set Net Only Area." Also established a 6-hour commercial fishing period in the remainder of District 1 referred to as the "Drift Gill Net Area."	Using lower Yukon River setnet test fishery and subsistence catch reports, it appeared that the 1996 fall chum salmon return was above preseason projection and would provide for a fall chum salmon commercial harvest toward the lower end of each district's GHR.
3-S-YF-04-96	August 12	Established a 6-hour commercial salmon fishing period in District 2.	Using lower Yukon River setnet test fishery and subsistence catch reports, it appeared that the 1996 fall chum salmon return was above preseason projection and that the 1996 fall chum salmon return could provide for a fall chum salmon commercial harvest toward the lower end of each district's GHR.

E.O. Number	Effective Date	Action Taken	Comments
3-S-YF-05-96	August 12	Established a 9-hour District 1 commercial salmon fishing period in the "Set Net Only Area." Also established a 6-hour commercial fishing period in the remainder of District 1 referred to as the "Drift Gill Net Area."	Using lower Yukon River setnet test fishery and subsistence catch reports, it appeared that the 1996 fall chum salmon return was above preseason projection. It also appeared that the 1996 fall chum salmon return would provide for a fall chum salmon commercial harvest toward the lower end of each district's GHR.
3-S-YF-06-96	August 14	Established a schedule of two 48-hour commercial salmon fishing periods per week in Subdistricts 4-B and 4-C of the Yukon Area.	Based on department test net catches at the mouths of the Yukon River, subsistence catch reports, commercial catch statistics in Districts 1 and 2, and preliminary escapement monitoring project information, the Yukon River fall chum salmon run strength appeared to be near average and run timing appeared to be earlier than average. With fall chum salmon well distributed throughout the area, initial subsistence salmon needs being fulfilled, and a harvestable commercial surplus of fall chum salmon available, a commercial fishing schedule in Subdistricts 4-B and 4-C was warranted.
3-S-YF-07-96	August 16	Established a 24-hour commercial salmon fishing period in Subdistricts 5-A, 5-B, and 5-C.	Based on department test net catches at the mouths of the Yukon River, subsistence catch reports, commercial catch statistics in Districts 1 and 2, and preliminary escapement monitoring project information, the Yukon River fall chum salmon run strength appeared to be near average and run timing appeared to be earlier than average. With fall chum salmon well distributed throughout the area, and with initial subsistence salmon needs being fulfilled and a harvestable commercial surplus of fall chum salmon available, establishing a commercial fishing schedule in Sub-districts 5-A, 5-B and 5-C was warranted.
3-S-YF-08-96	August 18	Provided additional subsistence fishing time to the Yukon River Subdistricts 5-A, 5-B, and 5-C.	By regulation, subsistence fishing schedules in Subdistricts 5-A, B&C coincide with commercial fishing periods. In Subdistrict 5-A, , only 24-hours of commercial time is allowed per week during the fall season (Toklat River management plan). Subsistence fishermen expressed this amount of time was not sufficient to meet their needs. It was appropriate to provide additional subsistence fishing only opportunities and a 72-hour fishing period in Subdistrict 5-A was allowed. Limited commercial fishing activities in Subdistricts 5-B&C also limited subsistence fishing time and an additional 24-hour subsistence fishing period was allowed.

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E.O. Number	Effective Date	Action Taken	Comments
3-S-YF-09-96	August 16	Established two 24-hour commercial fishing periods in separate portions of Subdistrict 5-D: in that portion downstream of the mouth of the Chandalar River and in that portion upstream of the mouth of the Chandalar River.	Based on department test net catches at the mouth of the Yukon River, subsistence catch reports, commercial catch statistics in Districts 1 and 2, and preliminary escapement monitoring project information, the Yukon River fall chum salmon run strength appeared to be near average and run timing appeared to be earlier than average. Fall chum salmon were well distributed throughout the lower portion of Subdistrict 5-D by August 16, and were expected to be well distributed throughout the upper portion of the subdistrict by August 23. With initial subsistence salmon needs being fulfilled and a harvestable commercial surplus of fall chum salmon available, establishing a commercial fishing period in Subdistrict 5-D was warranted.
3-S-YF-10-96	August 15	Established a 9-hour District 1 commercial salmon fishing period in the "Set Net Only Area." Established a 6-hour commercial fishing period in the remainder of District 1 referred to as the "Drift Gill Net Area." Additioanlly, this EO established a 9-hour District 2 commercial salmon fishing period.	Based on subsistence catch reports and preliminary information from escapement monitoring projects, a significant number of fall chum salmon entered the Yukon River prior to July 16. Using lower Yukon River setnet test fishery, commercial catch statistics, and subsistence catch reports, it appeared that the 1996 fall chum salmon return was above preseason projection. It also appeared that the fall chum salmon return could provide for a fall chum salmon commercial harvest toward the lower end of each district's GHR. Preliminary information indicating that the fall chum salmon run may be early was available from upriver projects including test fish wheel catches at the village of Tanana and the border, and the Sheenjek River sonar.
3-S-YF-11-96	August 19	Established a 9-hour District 1 commercial salmon fishing period in the "Set Net Only Area." Also established a 6-hour commercial fishing period in the remainder of District 1 referred to as the "Drift Gill Net Area."	Using lower Yukon River setnet test fishery, commercial catch statistics, and subsistence catch reports, it appeared that the 1996 fall chum salmon return was above preseason projection. It also appeared that the fall chum salmon return could provide for a fall chum salmon commercial harvest toward the lower end of each district's GHR. Preliminary information indicating that the fall chum salmon run may be early was available from upriver projects including test fish wheel catches at the village of Tanana and the border, and the Sheenjek River sonar.

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E.O. Number	Effective Date	Action Taken	Comments
3-S-YF-12-96	August 20	Continued the subsistence fishing period established by Emergency Order 3-S-YF-08-96 in the Yukon River's Subdistrict 5-A and established an additional subsistence only fishing period in Subdistricts 5-B and 5-C.	By regulation, subsistence fishing schedules in Subdistricts 5-A, B &C coincide with commercial fishing periods. In Subdistrict 5-A, as prescribed by the Toklat River management plan, only 24 hours of commercial fishing time is allowed per week during the fall season. Commercial fishing activities in 5-B &C also limited subsistence fishing time. It had been expressed by subsistence fishermen that the amount of time allowed for commercial fishing was not sufficient to meet their needs. This emergency order continued the subsistence only fishing period in Subdistrict 5-A and allowed an additional 48-hour subsistence only fishing period in Subdistrict 5-B & C.
3-S-YF-13-96	August 23	Established a second commercial salmon fishing period in Subdistrircts 5-A, 5-B, and 5-C.	Based on department test net catches at the mouths of the Yukon River, subsistence catch reports, commercial catch statistics in Districts 1 and 2, and preliminary escapement monitoring project information, the Yukon River fall chum salmon run strength appeared to be near average and run timing appeared earlier than average. It was the assessment of the department that the 1996 Yukon River fall chum salmon run was large enough to support a commercial harvest toward the lower end of each district's or subdistrict's GHR. With the fall chum salmon well distributed throughout the area and with initial subsistence salmon needs being fulfilled and a harvestable commercial surplus of fall chum salmon available, a second commercial period was warranted.
3-S-YF-14-96	August 23	Established a 5-day-a-week subsistence salmon fishing schedule for Yukon River Subdistricts 5-A, 5-B, and 5-C during the fall commercial salmon season.	By regulation, the subsistence fishing schedule in Subdistricts 5-A,B&C coincides with the commercial fishing periods. However, in Subdistrict 5-A, (Toklat River management plan, only 24 hours of commercial fishing time is allowed per week during the fall season. Commercial fishing activities in Subdistricts 5-A,B&C also limited subsistence fishing time. Subsistence fishermen expressed that the amount of time provided for commercial fishing was not sufficient to meet their subsistence fishing needs. It was then appropriate to provide additional subsistence fishing opportunities during the fall commercial season.

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E.O. Number	Effective Date	Action Taken	Comments
3-S-YF-15-96	August 22	Established a 9-hour District 1 commercial salmon fishing period in all of District 1, including the "Set Net Only Area" as described in 5 AAC 05.330. Also established a nine-hour District 2 commercial salmon fishing period.	The 1996 fall chum salmon return appeared to be above preseason projection. It also appeared that the fall chum salmon return would provide for a fall chum salmon commercial harvest toward the lower end of each district's GHR. Because of no buyers in District 3, no commercial fishing had occurred in District 3. During the nine Districts 1 and 2 commercial fishing periods, a total of approximately 51,000 fall chum and 38,000 coho salmon were harvested. A sixth commercial fishing period in District 1 and a fifth commercial salmon fishing period in District 2 was warranted.
3-S-YF-16-96	August 25	Established a 4-hour District 1 commercial salmon fishing period in all of District 1, including the "Set Net Only Area" as described in 5 AAC 05.330. and a 6-hour District 2 commercial salmon fishing periods.	Using lower Yukon River setnet test fishery, preliminary escapement monitoring projects, commercial catch statistics, and subsistence catch reports, it appeared that the 1996 fall chum salmon return was above preseason projection. It also appeared that the fall chum salmon return would provide for a fall chum salmon commercial harvest toward the lower end of each district's GHR. Because of no buyers in District 3, no commercial fishing had occurred in District 3. During the ten Districts 1 and 2 commercial fishing periods, a total of approximately 54,000 fall chum and 43,000 coho salmon were harvested. A seventh commercial period in District 1 and a sixth in District 2 was warranted.
3-S-YF-17-96	September 1	Cancelled the previously established two 48-hour commercial salmon fishing periods per week schedule in Subdistricts 4-B and 4-C of the Yukon Area.	Based on processors verbal harvest reports, the commercial harvest was ~3,000 fall chum and 200 coho salmon. The subdistricts 4-B &C fall chum salmon GHR is 5,000 to 40,000 fall chum salmon with the targeted goal toward the lower end of this range. Due to the absence of buyers, the low end of the GHR would not be reached. This EO kept the commercial season open, but no commercial periods were being established. As stipulated by regulation, any commercial fishing closure greater than five days in duration, salmon could not be taken from 6:00 p.m. Fridays until 6:00 p.m. Sundays. This allowed a subsistence fishing schedule of five days per week. In the event buyers returned to the area, future commercial periods would be permitted and subsistence openings adjusted accordingly.

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E.O. Number	Effective Date	Action Taken	Comments
3-S-YF-18-96	September 3	Established the third and fourth commercial salmon fishing periods in Subdistricts 5-A, 5-B, and 5-C.	Based on department test net catches at the mouth of the Yukon River, subsistence catch reports, commercial catch statistics in Districts 1 and 2, the Yukon River fall chum salmon run strength appeared to be near average. As of August 24, approximately 8,500 fall chum salmon and 1,500 pounds of roe were sold in Subdistricts 5-A,B&C. Expanding for the number of females needed to produce the roe sold, the department estimated the commercial harvest to be approximately 10,000 fall chum salmon. It was the assessment of the department that the 1996 Yukon River fall chum salmon run was large enough to support additional commercial harvests in Subdistricts 5-A,B&C. With the fall chum salmon well distributed throughout the area and with initial subsistence salmon needs being fulfilled and a harvestable commercial surplus of fall chum salmon available, continued commercial fishing was warranted.
3-S-YF-19-96	September 3	Established the subsistence fishing schedule of two 48-hour periods per week for Yukon River Subdistricts 5-A, 5-B, and 5-C until further notice.	By regulation, during the commercial salmon season the subsistence fishing schedule in Subdistricts 5-A,B&C coincide with the commercial fishing periods. In Subdistrict 5-A, as prescribed by the Toklat River management plan, there may be only 24 hours of commercial fishing time allowed per week during the fall season. Commercial fishing activities in Subdistricts 5-A,B&C also limited subsistence fishing time. It was expressed by subsistence fishermen that the amount of time provided for commercial fishing was not sufficient to meet their subsistence fishing needs. The subsistence fishing schedule was adjusted to accommodate two commercial periods per week while still providing additional subsistence salmon fishing. This EO established a more historical subsistence salmon fishing schedule by providing two 48-hour subsistence salmon fishing periods a week during the commercial salmon fishing season.

E.O. NUMBER	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
3-S-YF-20-96	September 5	Established a 48-hour commercial fishing period in Subdistrct 5-D	As of September 3, a total of 1,904 fall chum salmon had been captured in Canadian tagging wheels. The historical average is 550 chum salmon for this date. Passage rates at the Tanana north bank test wheel suggested that passage into Canada should continue to remain strong for several weeks, and that the Alaska border passage obligation would be reached. It was the assessment of the department that the 1996 Canadian mainstem Yukon River fall chum salmon run was large enough to support additional commercial harvests in Subdistrict 5-D. With fall chum salmon well distributed throughout the area, and with initial subsistence salmon needs being fulfilled and a harvestable commercial surplus of fall chum salmon available, continued commercial fishing was warranted.
3-S-YF-21-96	September 7	Established a commercial salmon fishing schedule of one 24-hour period per week in Subdistrict 5-A and two 48-hour periods per week in Subdistrict 5-B.	By regulation, only one 24-hour commercial fishing period per week is allowed in Subdistrict 5-A due to concerns over the Toklat River stocks. This emergency order provides one 24-hour period per week.In Subdistrict 5-B, this emergency order is providing the historical fishing schedule of two 48-hour periods a week schedule.
3-S-YF-22-96	September 7	Established the subsistence fishing schedule for Yukon River Subdistricts 5-A and 5-B.	By regulation, during the commercial salmon season the subsistence fishing schedule in Subdistricts 5-A,B&C coincides with the commercial fishing periods. Because commercial fishing activities in Subdistrict 5-A limited subsistence fishing time, subsistence fishermen said the amount of time provided for commercial fishing was insufficient to meet their subsistence fishing needs. This EO provided a two 48-hour period per week subsistence fishing schedule in Subdistrict 5-A. It also established the same two 48-hour commercial fishing periods per week schedule for subsistence fishing in Subdistrict 5-B. No buyers participated in the last commercial opening in Subdistrict 5-C and it did not appear that buyers would be purchasing in this subdistrict for the remainder of the season and commercial fishing was suspended. By regulation, the suspension of commercial salmon fishing in Subdistrict 5-C allowed for increased subsistence salmon fishing time of five days a week. In the event that buyers returned to the area, future commercial salmon fishing periods

E.O. Number	Effective Date	Action Taken	Comments
			would be permitted and this subsistence fishing schedule altered.
3-S-YF-23-96	September 10	Established a 48-hour commercial fishing period in Subdistrict 5-D.	It was the assessment of the department that the 1996 Canadian mainstem Yukon River fall chum salmon run was large enough to support additional commercial harvests in Subdistrict 5-D. With fall chum salmon well distributed throughout the area, and with initial subsistence salmon needs being fulfilled and a harvestable commercial surplus of fall chum salmon available, continued commercial fishing was warranted.
3-S-YF-24-96	September 13	Established on 24-hour commercial salmon fishing period in Subdistricts 6-A,B&C. Additionally, adjusted Subdistricts 6-A&B subsistence fishing time to coincide with the commercial fishing period.	Based on the Lower Yukon Area test fisheries, subsistence catch reports, commercial catch statistics, and preliminary escapement information, it appeared that the 1996 fall chum salmon run was large enough to support going toward the lower end of each district(s) or subdistrict(s) GHR. Based on Tanana River and Tanana village test fish wheels, Toklat River sonar, and subsistence catch reports, the Tanana River component of the fall chum salmon return appeared to be below average for this date but should support a commercial fishery toward the low end of the District 6 GHR. A commercial salmon fishing period in District 6 was warranted. To provide for an orderly fishery, the subsistence fishing schedule in Subdistricts 6-A&B was adjusted to coincide with the commercial fishing period. In Subdistrict 6-C, no subsistence fishing is allowed by regulation. A separate EO will adjust the Subdistrict 6-C personal use schedule to coincide with the commercial fishing period.
3-S-YF-25-96	September 13	Adjusted the Subdistricts 6-A,B&C personal use salmon fishing time to coincide with the commercial fishing period.	Based on Lower Yukon Area test fisheries, subsistence catch reports, commercial catch statistics, and preliminary escapement information, it appeared that the 1996 fall chum salmon run was large enough to support going toward the lower end of each district(s) or subdistrict(s) GHR. Based on Tanana River and Tanana village test fish wheels, Toklat River sonar, and subsistence catch reports, the Tanana River component of the fall chum salmon return appeared to be below average for this date but should support a commercial fishery toward the low end of the District 6 GHR.To provide for an orderly fishery, the personal use salmon fishing schedule in Subdistricts 6-A,B&C was adjusted to coincide with the commercial fishing period.

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E.O. Number	Effective Date	Action Taken	Comments
3-S-YF-26-96	September 14	Established a 48-hour commercial fishing period in Subdistrict 5-D.	Passage rates at the Tanana north bank test wheel continued to suggest that passage into Canada would continue to remain strong for several more weeks, and that the Alaska border passage obligation would be reached. It was the assessment of the department that the 1996 Canadian mainstem Yukon River fall chum salmon run was large enough to support additional commercial harvests in Subdistrict 5-D. With fall chum salmon well distributed throughout the area, and with initial subsistence salmon needs being fulfilled and a harvestable commercial surplus of fall chum salmon available, continued commercial fishing was warranted.
3-S-YF-27-96	September 20	Established one 24-hour commercial salmon fishing period in Subdistricts 6-A,B&C. Also adjusted the Subdistricts 6-A&B subsistence fishing time to coincide with the commercial fishing period.	The 1996 fall chum salmon run appeared large enough to support going toward the lower end of each district(s) or subdistrict(s) GHR. Based on Tanana River and Tanana village test fish wheels, Toklat River sonar, and subsistence catch reports, the Tanana River component of the fall chum salmon return appeared to be below average; however, recent subsistence and commercial catch rates observed on September 13 reflected a fall chum salmon return closer to average. With near average rates observed in the Tanana River subsistence and commercial fisheries and the apparent above average fall chum salmon production from the parent-years, additional commercial fishing time was allowed. For an orderly fishery, the subsistence fishing schedule in Subdistricts 6-A&B was adjusted to coincide with the commercial fishing period.
3-S-YF-28-96	September 20	Adjusted the Subdistricts 6-A,B&C personal use salmon fishing time to coincide with the commercial fishing period.	Based on Lower Yukon Area test fisheries, subsistence catch reports, commercial catch statistics, and escapement information, it appeared the 1996 fall chum salmon run was large enough to support going toward the lower end of each district(s) or subdistrict(s) GHR. Based on Tanana River and Tanana village test fish wheels, Toklat River sonar, and subsistence catch reports, the Tanana River component of the fall chum salmon return appeared to be below average for this date but should support a commercial fishery toward the low end of the District 6 GHR. To provide for an orderly fishery, the personal use salmon fishing schedule in Subdistricts 6-A,B&C was adjusted by this emergency order to coincide with the commercial fishing period.

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E.O. Number	Effective Date	Action Taken	Comments
3-S-YF-29-96	September 20	Established a 48-hour commercial fishing period in Subdistrict 5-D.	Passage rates to date and those anticipated suggested that the fall chum salmon border passage obligation would be exceeded. It was the assessment of the department that the 1996 Canadian mainstem Yukon River fall chum salmon run was large enough to support additional commercial harvests in Subdistrict 5-D. With fall chum salmon well distributed throughout the area, and with initial subsistence salmon needs being fulfilled and a harvestable commercial surplus of fall chum salmon available, continued commercial fishing was warranted.
3-S-YF-30-96	September 27	Established one 24-hour commercial salmon fishing period in Subdistricts 6-A,B&C. Also adjusted the Subdistricts 6-A&B subsistence fishing time	With near average catch rates observed in the Tanana River subsistence and commercial fishery and the apparent above average fall chum salmon production from the parent-years, additional commercial fishing is being allowed by this emergency order. A 24-hour commercial fishing period would allow a limited harvest and provide additional information that could be used to assess the run strength. It is anticipated that a significant amount of the commercial harvest will be salmon roe. The carcasses from the commercial roe fishery will be available for subsistence use. Some of the salmon carcasses available from the commercial roe fishery displaced salmon that would have had to be harvested in order to meet the subsistence needs. The subsistence fishing schedule in Subdistricts 6-A and 6-B was adjusted by this emergency order to coincide with the commercial fishing period. In Subdistrict 6-C, no subsistence fishing is allowed by regulation. A separate emergency order will adjust the personal use salmon fishing schedule in Subdistrict 6-C to coincide with the commercial fishing period.
3-S-YF-31-96	September 27	Adjusted the Subdistricts 6-A,B&C personal use salmon fishing time to coincide with the commercial fishing period.	Emergency Order 3-S-YF-30-96 established a 24-hour commercial fishing period in Subdistricts 6-A, B&C. To provide for an orderly fishery, the personal use salmon fishing schedule was adjusted by this emergency order to coincide with the commercial fishing period. The "normal" personal use salmon fishing schedule in Subdistricts 6-A, 6-B, and 6-C is for two 42-hour periods per week. This EO adjusted this time to allow for one 24-hour personal use salmon fishing period that coincided with the commercial periods and a separate 66-hour personal use salmon fishing only period.

APPENDIX B

LOWER YUKON AREA SALMON

Appendix B.1. Commercial catches of chinook and summer chum salmon by mesh size, Districts 1 and 2, Lower Yukon Area, 1961-1996. [a]

	Unrestricted Mesh Size [b]				6 inch Max. Mesh Size [c]	
	Chinook			Summer Chum	Chinook	Summer Chum
Year	District 1	District 2	Total	Districts 1 and 2	Districts 1 and 2	Districts 1 and 2
1961	84,466	29,026	113,492	-	-	-
1962	67,099	22,224	89,323	-	-	-
1963	85,004	24,221	109,225	-	-	-
1964	67,555	20,246	87,801	-	-	-
1965	89,268	23,763	113,031	-	-	-
1966	70,788	16,927	87,715	-	-	-
1967	104,350	20,239	124,589	10,919	-	-
1968	79,465	21,392	100,857	14,402	-	-
1969	70,588	14,756	85,344	41,418	97	15,437
1970	56,469	17,141	73,610	104,705	57	16,623
1971	84,397	19,226	103,623	42,189	1,176	57,851
1972	68,059	17,317	85,376	78,698	1,991	37,881
1973 [d]	52,790	12,479	65,269	89,841	5,168	196,540
1974	69,457	17,464	86,921	349,758	1,631	227,507
1975	41,550	9,064	50,614	148,919	4,162	345,472
1976	56,392	15,296	71,688	267,075	7,631	128,431
1977	65,745	15,328	81,073	157,909	4,720	205,634
1978	53,198	28,872	82,070	275,512	7,737	354,603
1979	61,790	33,347	95,137	136,973	22,136	434,188
1980	78,157	42,755	120,912	95,876	19,474	605,679
1981	88,038	37,660	125,698	163,979	18,648	758,767
1982	70,743	35,656	106,399	225,106	6,687	217,563
1983	76,280	30,798	107,078	121,927	31,002	590,329
1984	65,101	29,355	94,456	242,076	16,394	287,531
1985 [e]	76,106	38,194	114,300	170,345	22,445	265,240
1986	42,922	36,603	79,525	231,372	15,307	438,182
1987	62,147	40,127	102,274	128,017	21,827	269,757
1988	32,792	20,009	52,801	225,049	39,469	848,321
1989 [f]	32,180	21,494	53,674	126,360	38,548	765,233
1990 [f]	42,092	24,000	66,092	99,588	18,147	281,418
1991 [f]	52,074	36,290	88,364	108,986	4,145	205,610
1992 [f]	54,569	28,679	83,248	81,458	27,678	242,878
1993	47,084	37,293	84,377	47,488	2,202	45,503
1994	61,633	41,692	103,325	39,832	608	15,369
1995	74,827	39,607	114,434	113,860	3,098	112,223
1996	0	0	0	0	0	0
10 Yr. Ave. (1976-1985)	69,155	30,726	99,881	185,678	15,707	384,797
10 Yr. Ave. (1986-1995)	50,232	32,579	82,811	120,201	17,103	322,449

[a] ADF&G test fishery sales included, 1961-1990. ADF&G test fishery sales not included, 1991-1993.
[b] Primarily 8 to 8-1/2 inch mesh size used during early June to early July.
[c] Catch through July 15-20, relatively few chinook and summer chum salmon taken after these dates.
[d] Six inch maximum mesh size regulation beginning late June to early July became effective in 1973.
[e] Six inch maximum mesh size regulation by emergency order during commercial fishing season became effective in 1985.
[f] Only includes information from fish ticket database; does not include salmon purchased illegally.
[h] 8 inch or greater mesh size restriction was in effect until June 27 and fishers were requested to take chum salmon home for subsistence use until June 22 in order to reduce the harvest of chums.

Appendix B.2. Chinook salmon commercial harvest data by period, chinook salmon season (unrestricted mesh size), District 1, Lower Yukon Area, 1974-1996.

	Period and Cumulative Harvest [a,b]										
Date	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
06/01											
06/02											
06/03											
06/04											
06/05	3.5 (3.5)					6.1 (6.1)					
06/06											
06/07								11.1 (11.1)			
06/08	7.5 (11.0)					4.9 (11.0)					
06/09					2.5 (2.5)			15.6 (26.7)			
06/10							6.8 (6.8)			22.3 (22.3)	
06/11		0.2 (0.2)									
06/12	14.7 (25.7)					19.5 (30.5)		14.5 (41.2)			
06/13					5.8 (8.3)						
06/14		0.4 (0.6)		0.04 (0.04)			26.1 (32.9)			12.7 (35.0)	
06/15	11.1 (36.8)								5.6 (5.6)		
06/16			0.1 (0.1)			9.3 (39.8)		18.3 (59.5)			
06/17					17.6 (25.9)		14.6 (47.5)			28.6 (63.6)	
06/18		1.1 (1.7)		2.6 (2.6)					12.4 (18.0)		
06/19	18.8 (55.6)		3.2 (3.3)			16.7 (56.5)		28.5 (88.0)			13.7 (13.7)
06/20					7.5 (33.4)						
06/21		5.7 (7.4)		10.4 (13.0)			26.2 (73.7)			12.7 (76.3)	
06/22	2.9 (58.5)					5.3 (61.8)			20.0 (38.0)		18.8 (32.5)
06/23			9.6 (12.9)				4.5 (78.2)				
06/24					14.4 (47.8)						
06/25		17.1 (24.5)		26.3 (39.3)					7.1 (45.1)		
06/26	7.2 (65.7)		15.4 (28.3)								16.1 (48.6)
06/27		9.8 (34.3)			5.4 (53.2)						
06/28				17.7 (57.0)							
06/29	3.8 (69.5)								18.1 (63.2)		16.5 (65.1)
06/30			13.8 (42.1)								
07/01		7.3 (41.6)		8.7 (65.7)							
07/02			14.3 (56.4)						7.5 (70.7)		
07/03											
07/04											
07/05											
07/06											
07/07											
07/08											

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	Period and Cumulative Harvest a,b											
Date	1985	1986	1987	1988	1989 [c]	1990 [d]	1991 [e]	1992 [f]	1993	1994	1995	1996
06/01												
06/02												
06/03												
06/04												
06/05												
06/06												
06/07												
06/08												
06/09												
06/10												14.0 (14.0)
06/11												
06/12											18 (18.4)	
06/13										14 (13.5)		6.8 (20.8)
06/14				5.9 (5.9)			17 (17.1)					
06/15						19.0 (19.0)			9 (9.1)		18 (35.9)	
06/16			13.0 (13.0)		18.9 (18.9)					23 (36.5)		
06/17				16.0 (21.9)								6.7 (27.5)
06/18							15 (32.2)		23 (32.1)			
06/19			22.5 (35.5)								7 (42.4)	
06/20		21.7 (21.7)			10.8 (29.7)			12 (11.5)				11.3 (38.8)
06/21				10.9 (32.8)			4.7 (36.9)		10 (42.5)			
06/22					2.5 (32.2)	15.0 (34.0)		22 (33.6)		14 (50.3)	2 (44.5)	
06/23			15.0 (50.5)									
06/24		10.2 (31.9)										10.9 (49.7)
06/25	23.6 (23.6)						9 (46.2)					
06/26			11.6 (62.1)					10 (43.6)			1 (45.6)	
06/27										11 (61.5)		6.9 (56.6)
06/28	33.7 (57.3)								3 (45.4)			
06/29						6.5 (40.4)						
06/30		5.6 (37.5)										
07/01									2 (47.0)			
07/02	18.8 (76.1)						6 (52.1)	11 (54.6)				
07/03						1.7 (42.1)						
07/04		5.4 (42.9)										
07/05												
07/06												
07/07												
07/08												

[a] Catch by period in thousands of fish.
[b] Cumulative catch during unrestricted mesh size fishing periods in thousands of fish.
[c] Does not include 3,211 chinook salmon sold illegally.
[d] Does not include 1,101 chinook salmon sold illegally.
[e] Does not include 2,711 chinook salmon sold illegally.
[f] Does not include 1,218 chinook salmon sold illegally.

Appendix B.3. Chinook salmon commercial harvest data by period, chinook salmon season (unrestricted mesh size), District 2, Lower Yukon Area, 1978-1996.

	Period and Cumulative Harvest [a,b]									
Date	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
06/01										
06/02										
06/03										
06/04		2 (1.6)								
06/05										
06/06										
06/07		1 (3.0)								
06/08				8 (7.6)						
06/09	5 (4.8)		4 (3.9)							
06/10										
06/11		5 (8.1)		11 (19.0)						
06/12	3 (8.0)		8 (11.7)							
06/13						6 (6.0)				
06/14										
06/15		14 (22.3)		11 (29.5)						
06/16	4 (12.3)		11 (22.6)			7 (13.3)				
06/17					4 (4.0)					
06/18		4 (26.2)		8 (37.7)						10 (9.5)
06/19	8 (20.1)									
06/20			8 (30.7)			11 (23.9)				
06/21		7 (33.4)			8 (11.8)		6 (5.6)			
06/22										12 (21.7)
06/23	4 (24.2)		12 (42.7)			7 (30.8)			15 (14.5)	
06/24					12 (23.7)					
06/25							14 (20.0)			11 (32.5)
06/26	5 (28.9)									
06/27								7 (7.0)	12 (26.8)	
06/28					3 (27.1)		9 (29.4)			
06/29										8 (40.1)
06/30										
07/01					9 (35.7)			18 (25.3)		
07/02									7 (34.2)	
07/03										
07/04								13 (38.2)		
07/05										
07/06										
07/07									2 (36.6)	
07/08										

-Continued-

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	Period and Cumulative Harvest a,b								
Date	1988	1989	1990	1991 [d]	1992 [c]	1993	1994	1995	1996
06/01									
06/02									
06/03									
06/04									
06/05									
06/06									
06/07									
06/08									
06/09									7.5 (7.5)
06/10									
06/11								1 (1.2)	
06/12									10.0 (17.5)
06/13									
06/14								9 (10.4)	
06/15							8 (8.2)		
06/16	3 (2.7)								4.9 (22.4)
06/17				12 (11.5)		11 (10.6)			
06/18			10 (10.3)					10 (20.2)	
06/19		11 (11.0)							3.3 (25.7)
06/20	9 (11.7)			10 (21.1)			18 (26.4)		
06/21						14 (24.7)		8 (28.6)	
06/22		8 (18.5)			6 (5.5)				
06/23	8 (20.0)								3.3 (29.0)
06/24			8 (18.0)	7 (27.8)	13 (18.5)				
06/25		3 (21.5)				7 (31.5)	11 (37.6)		
06/26				4 (31.9)					
06/27						3 (33.7)			
06/28					7 (25.9)				
06/29									
06/30						3 (36.0)			
07/01									1.2 (30 2)
07/02			5 (22.4)						
07/03							4 (41.7)		
07/04				4 (36.3)					
07/05			2 (24.0)						
07/06									
07/07									
07/08					3 (28.7)				

[a] Catch by period in thousands of fish.
[b] Cumulative catch during unrestricted mesh size fishing periods in thousands of fish.
[c] Does not include 207 chinook salmon caught illegally.
[d] Does not include 284 chinook salmon caught illegally.

Appendix B.4. Commercial chinook salmon harvest by statistical area, Lower Yukon Area, 1974-1996.

	District 1								
Year	334-11	334-12	334-13	334-14	334-15	334-16	334-17	334-18	Total
1974	2,935	30,174	6,984	3,987	12,721	2,048	6,826	6,165	71,840
1975	6,396	15,844	8,763	314	1,720	606	6,879	4,063	44,585
1976	8,333	27,937	7,507	851	5,101	1,415	6,164	5,102	62,410
1977	11,278	16,787	8,866	1,216	15,214	1,550	7,109	7,895	69,915
1978	886	12,237	4,135	4,388	22,019	3,738	7,533	4,070	59,006
1979	1,017	13,152	4,149	5,782	12,839	10,960	18,976	8,202	75,077
1980	464	12,832	3,235	9,224	30,737	12,333	13,654	7,903	90,382
1981	6,639	12,875	2,975	8,976	19,730	15,158	22,251	10,902	99,506
1982	3,439	11,268	2,842	9,038	9,331	7,295	18,185	13,052	74,450
1983	7,919	23,523	8,161	14,961	9,416	5,297	19,172	7,008	95,457
1984	14,385	15,320	2,598	6,297	11,123	1,434	19,089	4,425	74,671
1985	4,233	22,696	12,160	2,492	12,806	3,955	25,144	6,525	90,011
1986	4,187	7,954	3,494	5,430	10,258	1,422	15,948	4,342	53,035
1987	14,656	12,056	8,703	3,533	6,780	3,250	18,573	9,092	76,643
1988	6,780	11,154	6,023	4,274	14,123	618	8,703	5,434	57,109
1989[a]	2,213	5,703	4,794	3,999	12,682	7,303	18,037	4,422	59,153
1990[b]	1,473	7,315	4,478	4,257	12,486	2,794	14,619	3,739	51,161
1991[c]	1,689	4,244	1,624	3,451	12,664	6,251	18,243	5,455	53,621
1992[d]	11,302	12,601	9,001	6,313	5,880	2,285	18,233	7,379	72,994
1993	3,642	7,368	4,342	3,324	11,407	2,346	9,380	7,477	49,286
1994	4,176	6,723	5,037	3,888	14,580	1,686	17,575	8,576	62,241
1995	3,719	6,939	6,181	5,430	22,357	3,790	18,980	8,710	76,106
1996	6,079	6,858	3,791	3,297	8,850	4,478	16,789	6,500	56,642

-Continued-

Appendix B.4. (p. 2 of 2).

	District 2						District 3		
Year	334-21	334-22	334-23	334-24	334-25	Total	334-31	334-32	Total
1974	6,344	5,611	2,624	3,369	-	17,948	1,423	2,057	3,480
1975	3,282	3,045	2,785	2,203	-	11,315	2,791	1,386	4,177
1976	5,083	4,490	3,031	3,952	-	16,556	1,827	2,321	4,148
1977	6,577	4,584	2,110	3,451	-	16,722	1,617	2,348	3,965
1978	9,004	7,953	5,248	8,499	2,220	32,924	746	2,170	2,916
1979	10,698	11,214	6,733	7,573	5,280	41,498	2,195	2,823	5,018
1980	11,544	12,903	8,259	9,591	7,707	50,004	2,039	3,201	5,240
1981	12,341	13,275	7,024	5,950	7,191	45,781	1,241	2,782	4,023
1982	10,567	9,236	5,262	8,932	5,135	39,132	896	1,713	2,609
1983	12,433	10,424	7,779	6,260	6,333	43,229	1,335	2,771	4,106
1984	9,179	11,573	4,668	5,752	5,525	36,697	900	2,139	3,039
1985	11,843	18,584	4,877	4,613	8,448	48,365	854	1,734	2,588
1986	11,138	15,326	3,450	4,336	7,599	41,849	606	295	901
1987	14,195	9,672	5,663	6,376	11,552	47,458	1,698	341	2,039
1988	6,191	11,605	4,721	6,784	5,887	35,188	1,387	380	1,767
1989	5,257	12,380	4,647	4,411	6,530	33,225	1,623	22	1,645
1990	5,592	10,675	3,741	8,514	4,691	33,213	2,128	213	2,341
1991 [e]	9,330	10,423	5,332	6,552	7,339	38,976	1,214	1,130	2,344
1992 [f]	9,014	11,647	4,135	11,311	1,825	37,932	1,160	659	1,819
1993	8,641	9,223	6,118	6,085	7,226	37,293	1,478	23	1,501
1994	9,223	14,350	4,514	8,734	4,871	41,692	1,114	0	1,114
1995	7,832	14,041	4,841	5,887	8,857	41,458	0	0	0
1996	8,265	9,134	2,749	3,626	6,435	30,209	0	0	0

[a] Does not include 3,211 chinook and 150 summer chum salmon sold illegally.
[b] Does not include 1,101 chinook salmon sold illegally.
[c] Does not include 2,711 chinook and 1,023 summer chum salmon sold illegally.
[d] Does not include 1,218 chinook and 31 summer chum salmon sold illegally.
[e] Does not include 284 chinook salmon sold illegally.
[f] Does not include 207 chinook and 91 summer chum salmon sold illegally.

Appendix B.5. Commercial summer chum salmon harvest and effort data, Districts 1 and 2, Lower Yukon Area, 1967-1996. [a]

	District 1					District 2				
Year	Duration	Days Fished	Boat Hours	Catch	(Catch/Boat Hour)	Duration	Days Fished	Boat Hours	Catch	(Catch/Boat Hour)
1967	6/08-6/27	11.0	77,208	9,494	0.12	-	-	-	-	-
1968	6/06-7/03	14.0	91,380	12,995	0.14	6/13-7/02	10.5	27,600	1,407	0.05
1969	6/02-6/28	12.5	84,864	8,840	0.10	6/15-7/01	8.0	16,620	5,024	0.30
1970	6/11-7/03	10.5	58,056	87,169	1.50	6/14-7/03	9.0	15,756	17,536	1.11
1971	6/14-7/03	10.5	73,032	36,077	0.49	6/20-7/05	8.5	17,832	6,112	0.34
1972	6/08-7/01	12.5	79,236	69,658	0.88	6/15-7/01	8.5	19,296	9,040	0.47
1973 [b]	6/07-7/11	14.5	100,284	191,840	1.91	6/10-7/14	14.5	36,000	56,481	1.57
1974	6/03-7/13	16.5	114,624	461,025	4.02	6/05-7/16	15.5	35,316	72,281	2.05
1975	6/09-7/16	15.0	86,304	394,447	4.57	6/11-7/18	10.5	21,024	99,139	4.72
1976	6/14-7/14	12.0	90,658	272,493	3.01	6/20-7/16	11.0	32,624	99,190	3.04
1977	6/13-7/12	12.0	63,036	232,427	3.69	6/19-7/15	10.0	27,048	102,759	3.80
1978	6/08-7/15	13.5	100,008	393,785	3.94	6/08-7/14	13.5	44,376	218,196	4.92
1979	6/04-7/14	13.5	106,680	369,934	3.47	6/03-7/13	13.5	44,748	172,838	3.86
1980	6/09-7/15	12.8	89,412	391,252	4.38	6/08-7/17	12.5	48,060	308,704	6.42
1981	6/06-7/14	12.0	94,656	507,158	5.36	6/07-7/16	12.0	46,560	351,458	7.55
1982	6/14-7/13	9.5	81,240	248,950	3.06	6/16-7/16	10.0	37,920	180,321	4.76
1983	6/09-7/15	11.0	94,920	451,164	4.75	6/12-7/18	11.0	44,712	248,092	5.55
1984	6/18-7/13	8.0	67,776	292,676	4.32	6/20-7/16	8.0	32,208	234,677	7.29
1985 [c]	6/24-7/15	6.3	52,116	247,486	4.75	6/26-7/18	7.3	27,834	188,099	6.76
1986	6/14-7/15	8.5	66,768	381,127	5.71	6/15-7/14	7.5	33,954	288,427	8.49
1987	6/15-7/10	6.0	53,736	222,898	4.15	6/17-7/09	5.0	26,124	174,876	6.69
1988	6/09-7/15	6.8	55,692	648,198	11.64	6/12-7/14	6.8	33,456	425,172	12.71
1989	6/13-7/14	5.3	65,280	547,781 [d]	8.39	6/15-7/13	4.5	22,314	343,962	15.41
1990	6/14-7/03	2.3	21,267	148,911	7.00	6/18-7/05	2.4	12,333	132,507	10.74
1991	6/13-7/05	3.0	28,224	140,470 [f]	4.98	6/16-7/07	3.0	15,126	175,149	11.58
1992	6/20-7/09	2.9	25,925	177,329 [g]	6.84	6/22-7/08	2.3	11,705	147,129 [h]	12.57
1993	6/14-7/01	2.0	19,176	73,659	3.84	6/16-6/30	1.8	9,264	19,332	2.09
1994	6/13-7/05	1.6	14,073	42,332	3.01	6/15-7/03	1.3	6,807	12,869	1.89
1995	6/12-7/07	2.6	21,619	142,266	6.58	6/11-6/22	1.6	8,436	83,817	9.94
1996	6/10-6/28	2.5	28,812	92,506	3.21	6/09-7/01	2.4	9,339	30,727	3.29

[a] Summer chum salmon caught after the specified dates are not included. Includes ADF&G test fish sales through 1990.
[b] Six inch maximum mesh size regulation during late June to early July became effective in 1973.
[c] Six inch maximum mesh size regulation by emergency order during commercial fishing season became effective in 1985.
[d] Includes 150 summer chum salmon sold illegally.
[f] Includes 1,023 summer chum salmon sold illegally.
[g] Includes 31 summer chum salmon sold illegally.
[h] Includes 91 summer chum salmon sold illegally.

Appendix B.6. Commercial summer chum salmon harvest by statistical area, Lower Yukon Area, 1983-1996.

	District 1								
Year	334-11	334-12	334-13	334-14	334-15	334-16	334-17	334-18	Total
1983	42,165	112,074	37,976	64,556	29,841	22,918	96,512	45,122	451,164
1984	42,264	81,295	14,888	38,285	22,485	5,838	64,320	23,301	292,676
1985	13,696	53,540	26,127	10,047	33,133	10,381	73,948	26,614	247,486
1986	39,468	102,887	35,315	52,980	26,732	6,807	85,798	31,140	381,127
1987	34,852	51,350	22,794	15,109	21,646	7,786	45,911	23,450	222,898
1988	72,408	148,578	79,248	60,956	61,752	13,239	129,936	82,070	648,189
1989 [a]	29,129	89,794	40,036	71,576	118,908	20,468	136,669	41,051	547,631
1990 [f]	23,453	35,542	15,326	12,369	10,931	1,513	39,575	10,202	148,911
1991 [b]	13,767	32,621	5,223	11,133	11,560	23,213	34,775	7,155	139,447
1992 [c]	24,094	39,225	22,293	16,717	12,000	2,500	40,353	20,116	177,298
1993	13,123	17,869	9,745	8,672	2,920	661	9,196	11,473	73,659
1994	11,208	6,340	5,165	2,389	3,602	290	8,693	4,645	42,332
1995	32,084	23,420	15,834	19,154	15,919	3,150	24,349	8,356	142,266
1996	19,432	17,769	6,837	5,611	13,111	2,831	17,864	9,051	92,506

	District 2					
Year	334-21	334-22	334-23	334-24	334-25	Total
1983	57,740	71,821	56,499	31,027	31,005	248,092
1984	46,261	91,790	43,116	36,076	19,688	236,931
1985	32,911	87,687	24,983	18,911	23,607	188,099
1986	44,393	129,569	36,304	47,179	30,982	288,427
1987	48,734	54,459	19,157	22,988	29,538	174,876
1988	74,252	140,291	56,302	88,393	65,934	425,172
1989 [f]	46,224	140,571	48,986	54,542	53,639	343,962
1990 [d]	15,414	37,585	25,132	34,980	19,396	132,507
1991	46,378	70,188	32,584	14,915	11,084	175,149
1992	31,399	59,401	22,107	31,085	3,046	147,038
1993	5,444	3,711	4,445	2,920	2,812	19,332
1994	4,100	5,314	1,435	1,395	625	12,869
1995	23,794	38,808	11,541	7,257	2,417	83,817
1996	9,177	13,056	4,965	2,479	1,050	30,727

	District 3								
	334-31			334-32			Total		
Year	Number	Roe	Estimated Harvest [g]	Number	Roe	Estimated Harvest [g]	Number	Roe	Estimated Harvest [g]
1983	3,106		3,106	11,494		11,494	14,600		14,600
1984	447		447	640		640	1,087		1,087
1985	872		872	920		920	1,792		1,792
1986	442		442	0		0	442		442
1987	3,418		3,418	83		83	3,501		3,501
1988	11,463		11,463	2,502		2,502	13,965		13,965
1989	7,548		7,548	30		30	7,578		7,578
1990	562		562	81		81	643		643
1991	3,347		3,347	5,565		5,565	8,912		8,912
1992	63		63	2		2	65		65
1993	460		460	3		3	463		463
1994	35		35	0		0	35		35
1995	0		0	0		0	0		0
1996	0	162	465	0	773	1,069	0	935	1,534

[a] Does not include 150 summer chum salmon sold illegally.
[b] Does not include 1,023 summer chum salmon sold illegally.
[c] Does not include 31 summer chum salmon sold illegally.
[d] Does not include 91 summer chum salmon sold illegally.
[f] Includes ADF&G test fish sales through 1990.
[g] Estimated harvest includes reported harvest of both males and females harvested to produce roe sold.

Appendix B.7. Commercial fall chum and coho salmon harvest and effort data, District 1, Lower Yukon Area, 1961-1996. [a]

Year	Duration	Days Fished [b]	Boat Hours	Fall Chum Catch	Fall Chum (Catch/Boat Hour)	Coho Catch	Coho (Catch/Boat Hour)
1961	8/01-8/31	16	14,772	42,461	2.87	2,855	0.19
1962	8/01-9/03	21	46,950	53,116	1.13	22,926	0.49
1963	8/09-9/06	18	2,100	no purchases		5,572	2.65
1964	8/03-8/27	17 [c]	8,346 [c]	8,347	1.00 [c]	2,446	0.29 [c]
1965	8/02-8/04			22,936		350	
1966	7/25-9/10	28	41,994	69,836	1.66	19,254	0.46
1967	7/24-8/27	21	19,272	36,451	1.89	9,925	0.51
1968	7/22-8/28	22	47,232	49,857	1.06	13,153	0.28
1969	7/21-8/23	20	39,408	128,866	3.27	13,989	0.35
1970	7/20-8/26	22	56,160	200,306	3.57	12,632	0.22
1971	7/22-8/28	22	85,344	178,744	2.09	12,165	0.14
1972	7/20-8/26	22	81,726	134,752	1.65	21,705	0.27
1973	7/19-8/25	22	107,136	173,783	1.62	34,860	0.33
1974	7/18-8/14	12	41,868	137,235	3.28	13,713	0.33
1975	7/21-8/16	12	52,128	158,183	3.03	2,288	0.04
1976	7/19-8/13	11	55,026	91,091	1.66	4,064	0.07
1977	7/18-8/23	11	50,568	129,486	2.56	31,720	0.63
1978	7/17-8/29	13	56,184	127,947	2.28	16,460	0.29
1979	7/19-8/14	8	47,352	101,400	2.14	11,369	0.24
1980	7/17-8/19	7	24,216	106,829	4.41	4,819	0.20
1981	7/16-8/17	7	35,520	167,834	4.73	13,129	0.37
1982 [d]	7/19-8/13	8	40,944	91,271	2.23	15,114	0.37
1983 [d]	7/18-8/12	6	25,848	124,371	4.81	4,560	0.18
1984 [d]	7/16-8/17	6	21,240	78,751	3.71	29,472	1.39
1985 [e]	7/18-8/13	5	20,592	124,801	6.06	27,674	1.34
1986 [f]	8/04-8/22	4	13,662	59,352	4.34	24,824	1.82
1987	No Openings	0					
1988 [g]	8/08-8/30	3	9,408	45,529	4.84	36,435	3.87
1989 [h]	7/27-8/25	5	20,161	77,876	3.86	24,672	1.22
1990 [g]	7/23-8/20	3	7,392	27 337	3.70	13,354	1.81
1991 [h]	7/29-8/27	3	19,500	59,724	3.67	54,095	3.32
1992	No Openings	0					
1993	No Openings	0					
1994	No Openings	0					
1995 [k]	7/31-8/21	3	5,436	79,345	14.60	21,625	3.98
1996	8/06-8/26	4	7,715	33,629	4.36	27,705	3.59

[a] Prior to 1986, some fall chum and coho salmon may have been caught prior to specified dates. Includes ADF&G test fish sales through 1990.
[b] One day is equivalent to 24 hours during open fishing period.
[c] Information unavailable.
[d] District was divided into a Set Net Only (24 hour) area and a Gill Net (12 hour) area.
[e] District was divided into a Set Net Only (24 or 12 hour) area and a Gill Net (12 or 6 hour) area.
[f] District was divided into a Set Net Only (12 hour) area and a Gill Net (6 hour) area.
[g] District was divided into a Set Net Only (16 or 12 hour) area and a Gill Net (9 or 6 hour) area.
[h] Includes ADF&G test fish sales through 1990.
[k] District was divided into a Set Net Only (12, 9, 6, 4 or 3 hour) area and a Gill Net (9, 6, 4, or 3 hour) area.

Appendix B.8. Fall chum and coho salmon commercial harvest and effort in the Setnet Only and Gillnet areas, District 1, Lower Yukon Area, 1983-1996. [a]

Year	Setnet Area			Gillnet Area			Total		
	No. of Fishermen	Catch	Average Catch per Fisherman	No. of Fishermen	Catch	Average Catch per Fisherman	No. of Fishermen	Catch	Average Catch per Fisherman
Fall Chum Salmon									
1983	137	46,583	340	175	61,649	352	312	108,232	347
1984	137	34,817	254	164	24,307	148	301	59,124	196
1985	159	64,838	408	153	53,694	351	312	118,532	380
1986	122	28,449	233	160	30,903	193	282	59,352	210
1987 [b]									
1988	120	21,971	183	208	23,558	113	328	45,529	139
1989	103	26,865	261	219	51,011	233	322	77,876	242
1990	83	7,553	91	218	19,784	91	301	27,337	91
1991	67	19,769	295	252	39,955	159	319	59,724	187
1992 [b]									
1993 [b]									
1994 [b]									
1995	40	13,320	333	149	66,025	443	189	79,345	420
1996 [c]									
Coho Salmon									
1983	137	1,021	7	175	3,536	20	312	4,557	15
1984	137	15,077	110	164	14,390	88	301	29,467	98
1985	159	12,841	81	153	14,832	97	312	27,673	89
1986	122	9,334	77	160	15,490	97	282	24,824	88
1987 [b]									
1988	120	13,408	112	208	23,027	111	328	36,435	111
1989	103	6,443	63	219	18,227	83	322	24,670	77
1990	83	2,033	24	218	11,321	52	301	13,354	44
1991	67	19,497	291	252	34,598	137	319	54,095	170
1992 [b]									
1993 [b]									
1994 [b]									
1995	40	2,843	71	149	18,782	126	189	21,625	114
1996 [c]									
Combined Fall Chum and Coho Salmon									
1983	137	47,604	347	175	65,185	372	312	112,789	362
1984	137	49,894	364	164	38,697	236	301	88,591	294
1985	159	77,679	489	153	68,526	448	312	146,205	469
1986	122	37,783	310	160	46,393	290	282	84,176	298
1987 [b]									
1988	120	35,379	295	208	46,585	224	328	81,964	250
1989	103	33,308	323	219	69,238	316	322	102,546	318
1990	83	9,586	115	218	31,105	143	301	40,691	135
1991	67	39,266	586	252	74,553	296	319	113,819	357
1992 [b]									
1993 [b]									
1994 [b]									
1995	40	16,163	404	149	84,807	569	189	100,970	534
1996 [c]									

[a] Prior to 1986, some harvests of fall chum and coho salmon occurred before setnet only area designation went into effect. Includes ADF&G test fish sales through 1990.

[b] Season closed.

[c] Data not available yet.

Appendix B.9. Fall chum salmon commercial harvest by period, District 1, Lower Yukon Area, 1978-1996.

	Period and Cumulative harvest [a]									
Date	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
07/18	6.3 (6.3)		4.2 (4.2)					6.3 (6.3)		
07/19						16.1 (16.1)				
07/20		6.0 (6.0)			4.3 (4.3)					
07/21	5.1 (11.4)			6.0 (6.0)						
07/22			6.6 (10.8)		27.8 (32.1)					
07/23										
07/24		7.2 (13.2)		1.3 (7.3)						
07/25	52.8 (64.2)		10.4 (21.2)							
07/26										
07/27		14.8 (28.0)			4.0 (36.1)					
07/28	2.8 (67.0)			57.3 (64.6)						
07/29			15.3 (36.5)			3.0 (19.1)				
07/30					11.7 (47.8)					
07/31		9.7 (37.7)	1.4 (37.9)	23.2 (87.8)			18.3 (18.3)			
08/01	14.4 (81.4)									
08/02						18.5 (37.6)		2.2 (8.5)		
08/03		17.5 (55.2)					17.1 (35.4)			
08/04	0.4 (81.8)				7.9 (55.7)					
08/05			6.2 (44.1)			23.7 (61.3)			11.4 (11.4)	
08/06					1.2 (56.9)			15.2 (23.7)		
08/07		37.8 (93.0)	13.5 (57.6)				1.8 (37.2)			
08/08	1.4 (83.2)								7.5 (18.9)	
08/09						44.0 (105.3)		35.8 (59.5)		
08/10		1.3 (94.3)			13.7 (70.6)					
08/11	1.8 (84.8)		5.2 (62.8)							
08/12					20.7 (91.3)	19.1 (124.4)			10.5 (29.4)	
08/13				43.8 (131.6)				85.3 (124.8)		
08/14		7.1 (101.4)	1.8 (64.6)				11.8 (49.0)			
08/15	1.4 (86.2)								16.2 (45.6)	
08/16										
08/17							10.1 (59.1)			
08/18	10.2 (96.4)			3.9 (135.5)						
08/19			42.2 (106.8)						5.8 (51.4)	
08/20										
08/21										
08/22	21.9 (118.3)								8.0 (59.4)	
08/23										
08/24										
08/25	4.4 (122.7)									
08/26										
08/27										
08/28										
08/29	5.2 (127.9)									
08/30										

-Continued-

Appendix B.9. (page 2 of 2).

Date	Period and Cumulative harvest [a]								
	1988	1989	1990	1991	1992	1993	1994	1995	1996
07/18									
07/19									
07/20									
07/21									
07/22									
07/23									
07/24			1.0 (1.0)						
07/25									
07/26									
07/27			1.8 (2.8)						
07/28		4.4 (4.4)							
07/29									
07/30				15.3 (15.3)					
07/31			1.7 (4.5)					0.7 (0.7)	
08/01		0.2 (4.5)							
08/02				3.0 (18.3)				0.4 (1.1)	
08/03			11.2 (15.7)						
08/04		48.8 (53.3)							
08/05								12.7 (13.8)	
08/06				7.4 (25.7)					1.8 (1.8)
08/07			7.5 (23.2)					10.4 (24.2)	
08/08		3.8 (57.2)							
08/09	32.5 (32.5)			9.2 (34.9)				8.1 (32.3)	4.3 (6.1)
08/10									
08/11		2.5 (59.7)						4.5 (36.8)	
08/12									6.2 (12.3)
08/13				1.4 (36.3)				10.4 (47.2)	
08/14									
08/15		14.9 (74.7)						14.8 (62.0)	15.1 (27.4)
08/16				4.1 (40.4)					
08/17									
08/18								16.7 (78.7)	
08/19	0.5 (33.0)								1.3 (28.8)
08/20			4.1 (27.3)	2.8 (43.2)					
08/21								0.7 (79.4)	
08/22		2.9 (77.6)							1.3 (30.1)
08/23	6.9 (39.9)			14.7 (57.9)					
08/24									
08/25		0.3 (77.9)							
08/26	4.1 (44.0)								3.5 (33.6)
08/27				1.8 (59.7)					
08/28									
08/29									
08/30	1.5 (45.5)								

[a] Period and cumulative catches in thousands of fish. Fall chum salmon run usually well underway in the lower Yukon River by July 18. Some harvests of fall chum salmon occurred before 7/18.
Season closures occurred in the following years:
1981: Season closed 8/01-8/12.
1983: Season closed 7/20-7/27.
1984: Season closed 7/18-8/01 and 8/08-8/12.
1985: Season closed 7/20-7/31.
1986: Season closed 7/16-8/03.
1987: Season closed.
1988: Season closed 7/16-8/07.
1989: Season closed 7/15-7/26.
1990: Season closed 7/04-7/22 and 8/08-8/19.
1991: Season closed 7/15-7/26.
1992: Season closed.
1993: Season closed.
1994: Season closed.

Appendix B.10. Commercial fall chum salmon harvest by statistical area, Lower Yukon Area, 1983-1996. a

	District 1								
Year	334-11	334-12	334-13	334-14	334-15	334-16	334-17	334-18	Total
1983	135	10,300	2,224	10,460	35,824	19,985	24,816	20,627	124,371
1984	315	24,914	2,488	16,234	13,536	6,873	9,390	5,001	78,751
1985	594	34,332	6,035	36,885	43,022	1,485	5,898	1,697	129,948
1986	376	9,891	3,032	2,683	21,058	4,091	12,004	6,217	59,352
1987	0	0	0	0	0	0	0	0	0
1988	10,217	6,953	2,625	206	6,692	3,905	9,526	5,405	45,529
1989	0	2,929	1,420	5,577	26,611	17,477	15,526	8,336	77,876
1990	255	3,690	501	1,167	7,927	5,618	4,695	3,484	27,337
1991	75	11,976	3,036	5,586	9,968	8,040	11,880	9,163	59,724
1992	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	1,674	6,766	6,892	11,909	16,450	1,696	23,722	10,236	79,345
1996	0	2,686	2,333	1,243	4,561	9,976	8,504	4,326	33,629

	District 2						District 3		
Year	334-21	334-22	334-23	334-24	334-25	Total	334-31	334-32	Total
1983	17,245	4,673	24,132	22,072	17,523	85,645	4,607	5,411	10,018
1984	10,951	22,942	7,622	19,183	10,105	70,803	6,429	0	6,429
1985	9,131	10,607	3,530	5,859	11,363	40,490	4,173	991	5,164
1986	6,472	16,377	5,212	11,352	11,894	51,307	2,793	0	2,793
1987	0	0	0	0	0	0	0	0	0
1988	5,077	13,215	5,385	4,283	3,901	31,861	1,748	342	2,090
1989	12,005	34,268	15,001	19,029	17,603	97,906	15,153	179	15,332
1990	6,311	8,298	5,403	10,147	7,014	37,173	1,863	1,852	3,715
1991	10,584	23,195	14,291	28,306	26,252	102,628	7,209	2,004	9,213
1992	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	147	54,231	20,018	16,435	0	90,831	0	0	0
1996	1,960	14,349	4,184	7,634	1,524	29,651	0	0	0

[a] Includes ADF&G test fish sales through 1990.

Appendix B.11. Commercial coho salmon harvest by statistical area, Lower Yukon Area, 1983-1996. a

	District 1								
Year	334-11	334-12	334-13	334-14	334-15	334-16	334-17	334-18	Total
1983	16	567	86	463	1,123	56	1,532	752	4,595
1984	151	6,743	1,233	3,101	5,925	4,151	4,389	3,779	29,472
1985	585	6,187	1,673	8,320	5,304	936	2,153	2,517	27,675
1986	83	1,974	805	383	7,056	6,525	5,722	2,276	24,824
1987	0	0	0	0	0	0	0	0	0
1988	1,652	5,831	1,866	392	9,166	9,848	4,831	2,849	36,435
1989	0	1,822	306	1,115	5,830	4,696	7,680	3,223	24,672
1990	4	736	301	1,684	2,108	2,530	2,429	3,562	13,354
1991	30	4,302	1,072	4,432	8,130	19,630	7,980	8,519	54,095
1992	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	883	2,472	1,833	2,439	2,454	1,006	8,953	1,585	21,625
1996	0	1,555	1,564	854	3,995	9,634	8,068	2,035	27,705

	District 2						District 3		
Year	334-21	334-22	334-23	334-24	334-25	Total	334-31	334-32	Total
1983	1,549	140	715	114	39	2,557	0	0	0
1984	4,736	26,506	5,514	4,556	1,752	43,064	621	0	621
1985	3,369	5,052	4,394	1,077	3,233	17,125	171	0	171
1986	3,074	9,317	2,250	4,117	2,439	21,197	793	0	793
1987	0	0	0	0	0	0	0	0	0
1988	3,844	12,503	4,891	7,141	6,397	34,776	1,291	128	1,419
1989	6,199	18,427	3,668	4,262	5,966	38,522	3,978	10	3,988
1990	1,226	11,364	962	2,032	851	16,435	752	166	918
1991	8,746	17,939	3,587	6,094	4,532	40,898	1,427	478	1,905
1992	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	115	12,154	2,951	3,268	0	18,488	0	0	0
1996	761	12,155	2,755	4,409	894	20,974	0	0	0

[a] District 1 and 2 harvest may include ADF&G test fish sales through 1990.

Appendix B.12. Estimated exvessel value of commercial salmon fishery to Lower Yukon Area fishermen, 1977-1996.

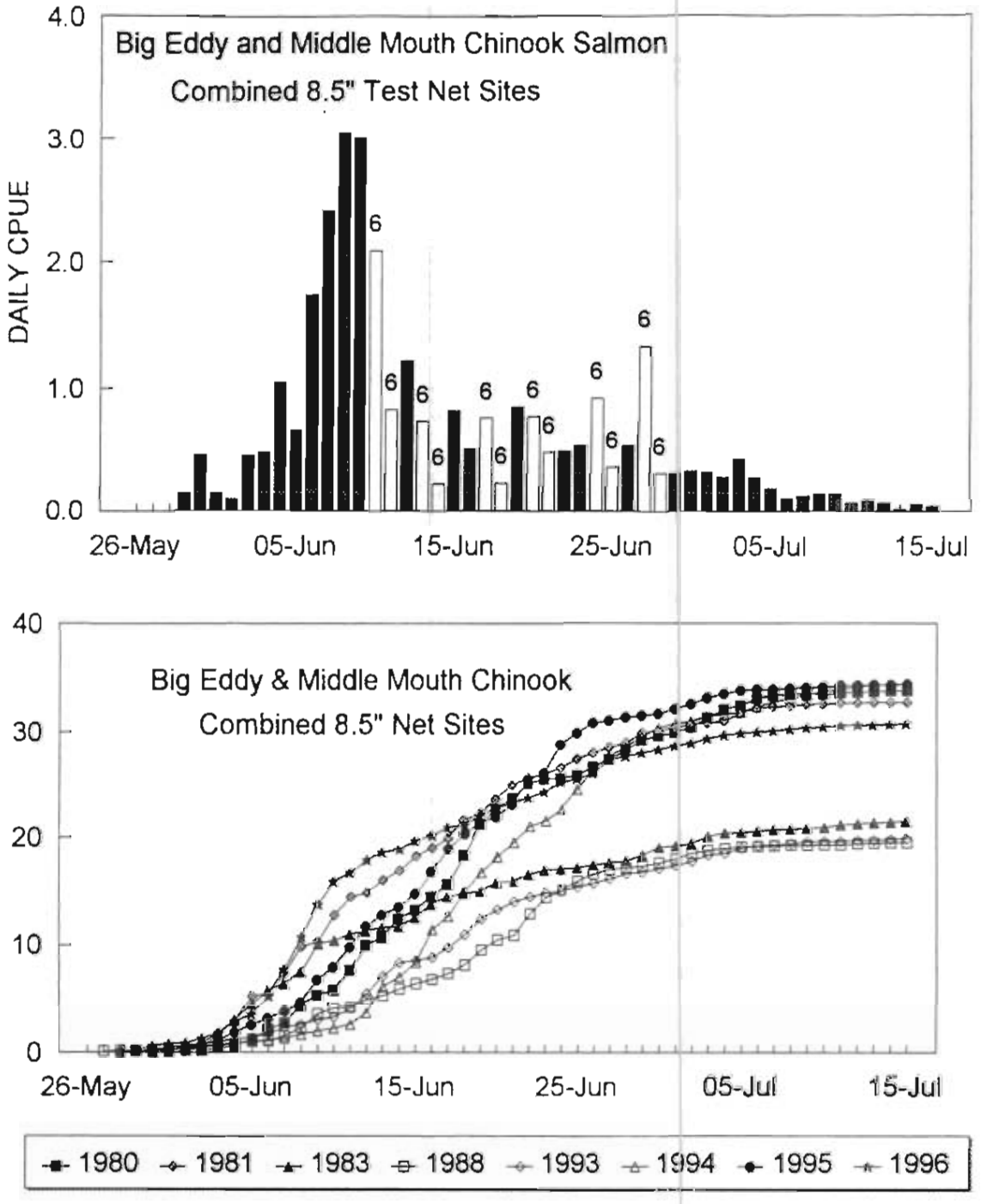
	Chinook		Summer Chum				Fall Chum		Coho			
Year	$/lb.	Dollars	$/lb.	$/Roe	Dollars	Subtotal Value	$/lb.	Dollars	$/lb.	Dollars	Subtotal Value	Total Value
1977	0.85	1,841,033	0.40		1,007,280	2,848,313	0.45	718,571	0.50	140,914	859,485	3,707,798
1978	0.90	2,048,674	0.45		2,071,434	4,120,108	0.47	691,854	0.60	96,823	788,677	4,908,785
1979	1.09	2,763,433	0.52		2,242,564	5,005,997	0.68	1,158,485	0.80	83,466	1,241,951	6,247,948
1980	1.04	3,409,105	0.20		1,027,738	4,436,843	0.28	394,162	0.36	17,374	411,536	4,848,379
1981	1.20	4,420,669	0.40		2,741,178	7,161,847	0.55	1,503,744	0.60	87,385	1,591,129	8,752,976
1982	1.41	3,768,107	0.40		1,237,735	5,005,842	0.55	846,492	0.69	135,828	982,320	5,988,162
1983	1.40	4,093,562	0.34		1,734,270	5,827,832	0.34	591,011	0.35	17,497	608,508	6,436,340
1984	1.50	3,510,923	0.26		926,922	4,437,845	0.32	374,359	0.50	256,050	630,409	5,068,254
1985	1.50	4,294,432	0.35		1,032,700	5,327,132	0.47	634,616	0.53	176,254	810,870	6,138,002
1986	1.63	3,165,078	0.38		1,746,455	4,911,533	0.49	359,321	0.71	311,942	611,263	5,522,796
1987	1.98	5,428,933	0.48		1,313,618	6,742,551	-	0	-	0	0	6,742,551
1988	2.97	5,463,800	0.66		5,001,100	10,464,900	1.01	638,700	1.38	734,400	1,373,100	11,838,000
1989	2.77	5,181,700	0.34		2,217,700	7,399,400	0.50	713,400	0.66	323,300	1,036,700	8,436,100
1990	2.84	4,620,859	0.24		497,571	5,318,430	0.45	238,165	0.66	137,302	375,467	5,693,897
1991	3.70	7,128,300	0.36		782,300	7,910,600	0.34	438,310	0.44	300,182	738,492	8,649,092
1992	4.12	9,957,002	0.27		606,976	10,563,978	-	0	-	0	0	10,563,978
1993	2.70	4,884,044	0.37		226,772	5,110,815	-	0	-	0	0	5,110,815
1994	2.07	4,169,270	0.21		79,206	4,248,476	-	0	-	0	0	4,248,476
1995	2.09	5,317,821	0.16		244,304	5,562,125	0.15	185,036	0.29	80,019	265,055	5,827,180
1996	1.95	3,491,582	0.09	2.96	89,020	3,580,602	0.10	48,579	0.26	96,795	145,374	3,725,976
5 Yr Ave 1991-1995	2.94	6,291,287	0.27	-	387,912	6,679,199	-	124,669	-	76,040	200,709	6,879,908

Appendix B.13. Lower Yukon River chinook and summer chum set gillnet test fishing data by day, Big Eddy and Middle Mouth projects, 1996.

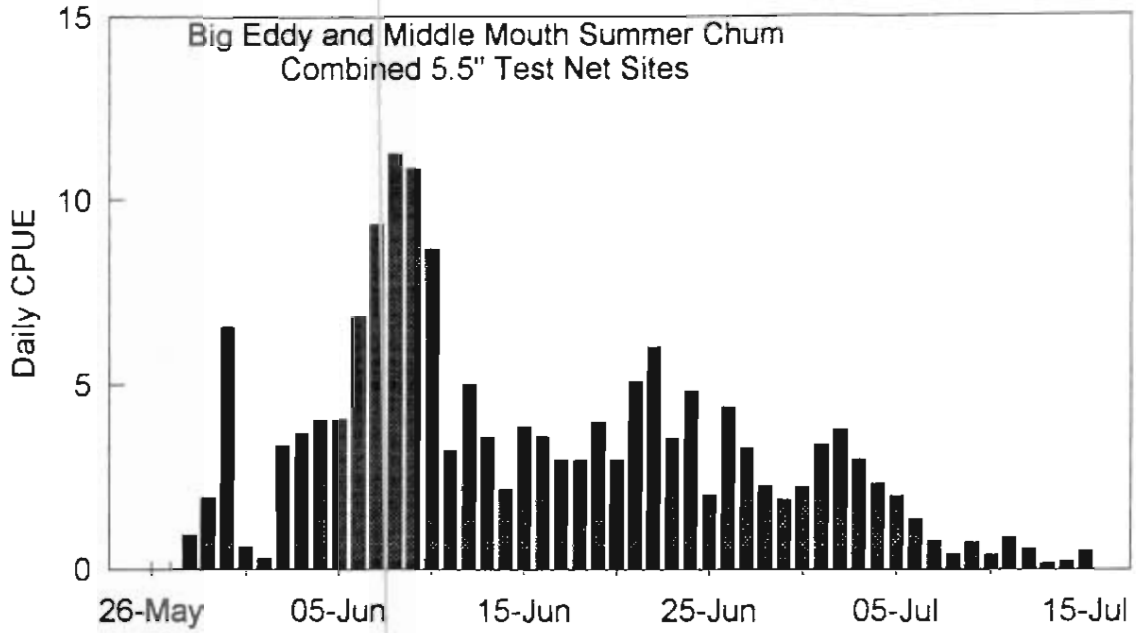
	Big Eddy & Middle Mouth Set Nets										
	Sites 1 & 2 8.5 in set gillnets				Sites 3 & 4 5.5 in set gillnets				Sites 3 & 4 5.5 in set gillnets		
	Chinook Salmon				Summer Chum Salmon				Chinook Salmon		
Date	Hours Fished	Daily Catch	Daily CPUE	Cumulative CPUE a	Hours Fished	Daily Catch	Daily CPUE	Cumulative CPUE a	Daily Catch	Daily CPUE	Cumulative CPUE a
26-May											
27-May											
28-May	48	0	0.00	0.00	24	22	0.92	0.92	1	0.04	0.04
29-May	48	7	0.15	0.15	24	46	1.92	2.84	3	0.13	0.17
30-May	48	22	0.46	0.61	24	158	6.58	9.42	2	0.08	0.25
31-May	48	7	0.15	0.76	48	30	0.63	10.05	0	0.00	0.25
01-Jun	48	5	0.10	0.86	48	15	0.31	10.36	2	0.04	0.29
02-Jun	84	38	0.45	1.31	84	281	3.35	13.71	26	0.31	0.60
03-Jun	96	46	0.48	1.79	96	353	3.68	17.39	25	0.26	0.86
04-Jun	96	101	1.05	2.84	96	389	4.05	21.44	19	0.20	1.06
05-Jun	96	63	0.66	3.50	96	388	4.04	25.48	45	0.47	1.53
06-Jun	96	167	1.74	5.24	96	657	6.84	32.32	79	0.82	2.35
07-Jun	96	231	2.41	7.65	96	895	9.32	41.64	120	1.25	3.60
08-Jun	96	293	3.05	10.70	96	1079	11.24	52.88	111	1.16	4.76
09-Jun	96	289	3.01	13.71	96	1042	10.85	63.73	59	0.61	5.37
10-Jun	96	201	2.09	15.80	96	832	8.67	72.40	35	0.36	5.73
11-Jun	96	80	0.83	16.63	96	307	3.20	75.60	23	0.24	5.97
12-Jun	96	117	1.22	17.85	96	483	5.03	80.63	19	0.20	6.17
13-Jun	96	70	0.73	18.58	96	344	3.58	84.21	15	0.16	6.33
14-Jun	96	21	0.22	18.80	96	207	2.16	86.37	8	0.08	6.41
15-Jun	96	79	0.82	19.62	96	371	3.86	90.23	17	0.18	6.59
16-Jun	96	49	0.51	20.13	96	345	3.59	93.82	21	0.22	6.81
17-Jun	96	73	0.76	20.89	96	285	2.97	96.79	17	0.18	6.99
18-Jun	96	22	0.23	21.12	96	283	2.95	99.74	13	0.14	7.13
19-Jun	96	82	0.85	21.97	96	382	3.98	103.72	51	0.53	7.66
20-Jun	96	74	0.77	22.74	96	282	2.94	106.66	32	0.33	7.99
21-Jun	96	46	0.48	23.22	96	490	5.10	111.76	45	0.47	8.46
22-Jun	96	47	0.49	23.71	96	578	6.02	117.78	23	0.24	8.70
23-Jun	96	52	0.54	24.25	96	340	3.54	121.32	32	0.33	9.03
24-Jun	96	88	0.92	25.17	96	464	4.83	126.15	37	0.39	9.42
25-Jun	96	35	0.36	25.53	96	194	2.02	128.17	17	0.18	9.60
26-Jun	96	52	0.54	26.07	96	422	4.40	132.57	12	0.13	9.73
27-Jun	96	128	1.33	27.40	96	315	3.28	135.85	16	0.17	9.90
28-Jun	96	30	0.31	27.71	96	218	2.27	138.12	9	0.09	9.99
29-Jun	96	30	0.31	28.02	96	182	1.90	140.02	6	0.06	10.05
30-Jun	96	32	0.33	28.35	96	215	2.24	142.26	3	0.03	10.08
01-Jul	96	31	0.32	28.67	96	324	3.38	145.64	5	0.05	10.13
02-Jul	96	27	0.28	28.95	96	365	3.80	149.44	3	0.03	10.16
03-Jul	96	41	0.43	29.38	96	287	2.99	152.43	3	0.03	10.19
04-Jul	96	27	0.28	29.66	96	223	2.32	154.75	3	0.03	10.22
05-Jul	96	18	0.19	29.85	96	190	1.98	156.73	5	0.05	10.27
06-Jul	96	11	0.11	29.96	96	132	1.38	158.11	0	0.00	10.27
07-Jul	96	12	0.13	30.09	96	75	0.78	158.89	3	0.03	10.30
08-Jul	96	14	0.15	30.24	96	41	0.43	159.32	1	0.01	10.31
09-Jul	96	14	0.15	30.39	96	72	0.75	160.07	1	0.01	10.32
10-Jul	96	7	0.07	30.46	96	40	0.42	160.49	3	0.03	10.35
11-Jul	96	9	0.09	30.55	96	85	0.89	161.38	5	0.05	10.40
12-Jul	96	7	0.07	30.62	96	57	0.59	161.97	0	0.00	10.40
13-Jul	96	2	0.02	30.64	96	17	0.18	162.15	1	0.01	10.41
14-Jul	96	6	0.06	30.70	96	22	0.23	162.38	0	0.00	10.41
15-Jul	96	4	0.04	30.74	96	49	0.51	162.89	0	0.00	10.41
Total		2,907		30.74		14,873		162.89	976		10.41

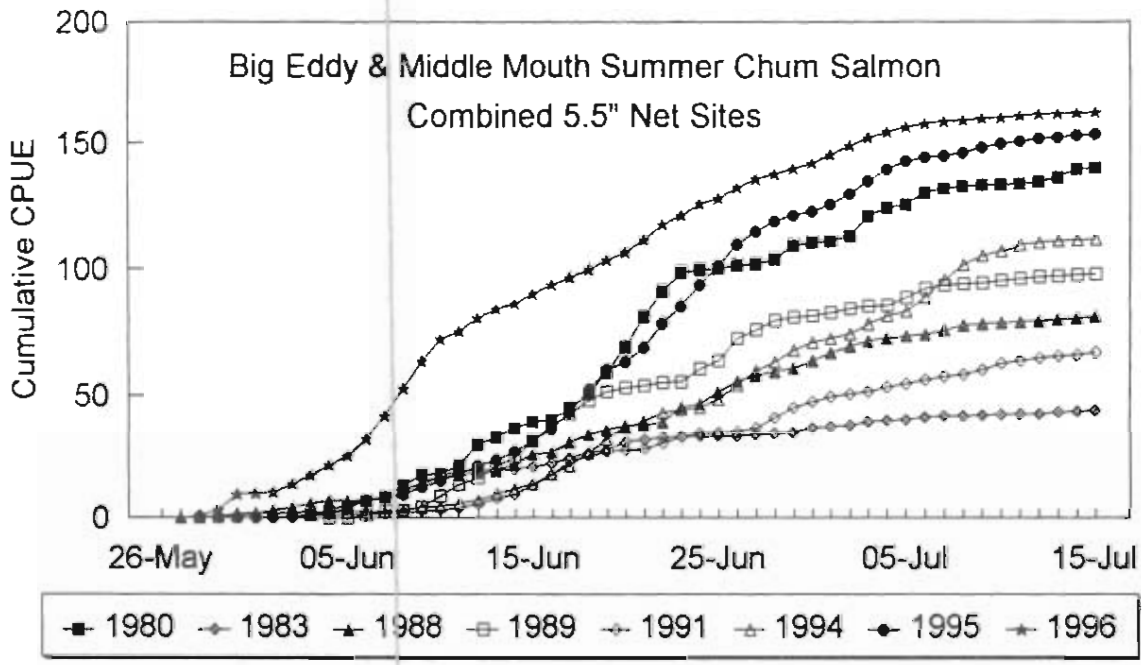
a The box indicates the first quartile to the third quartile of the cumulative CPUE. The median date of the cumulative CPUE is also highlighted.

Appendix B.14. Lower Yukon River combined chinook salmon set net (8.5 inch mesh) test fishing cumulative CPUE for selected years (below) and daily CPUE in 1996 (above). Clear bars indicate days during which commercial fishing was allowed. The number above the bars indicates hours open to fishing



Appendix B.15. Lower Yukon River combined summer chum salmon set net (5.5 inch mesh) test fishing cumulative CPUE for selected years (below) and daily CPUE in 1996 (above). Clear bars indicate days during which commercial fishing was allowed. The number above the bars indicates hours open to fishing



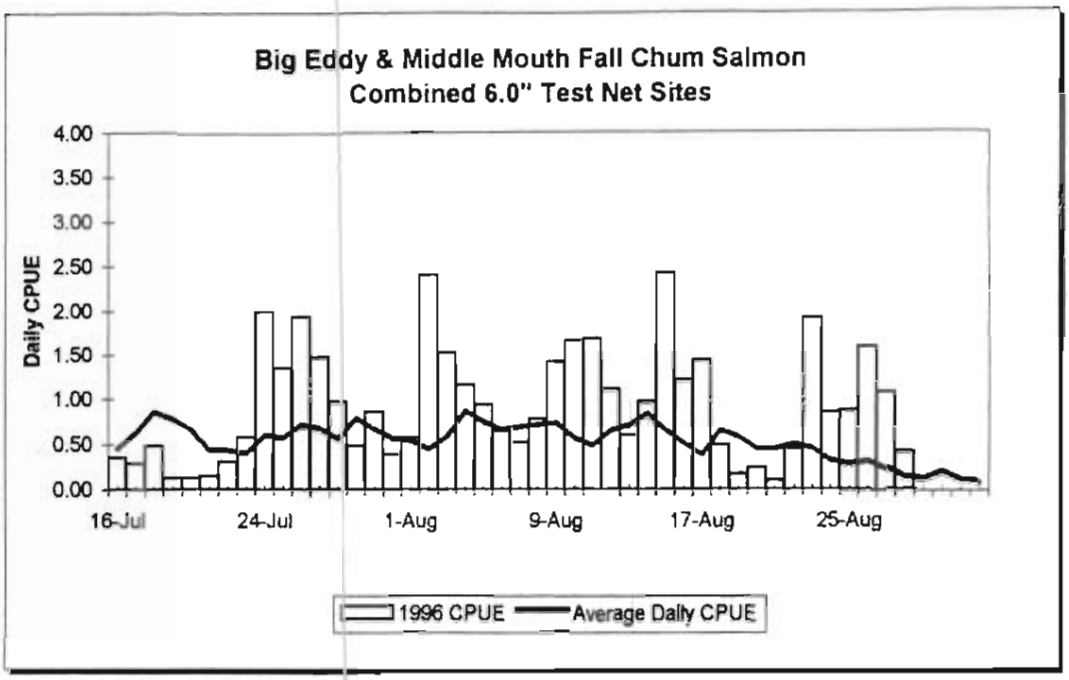


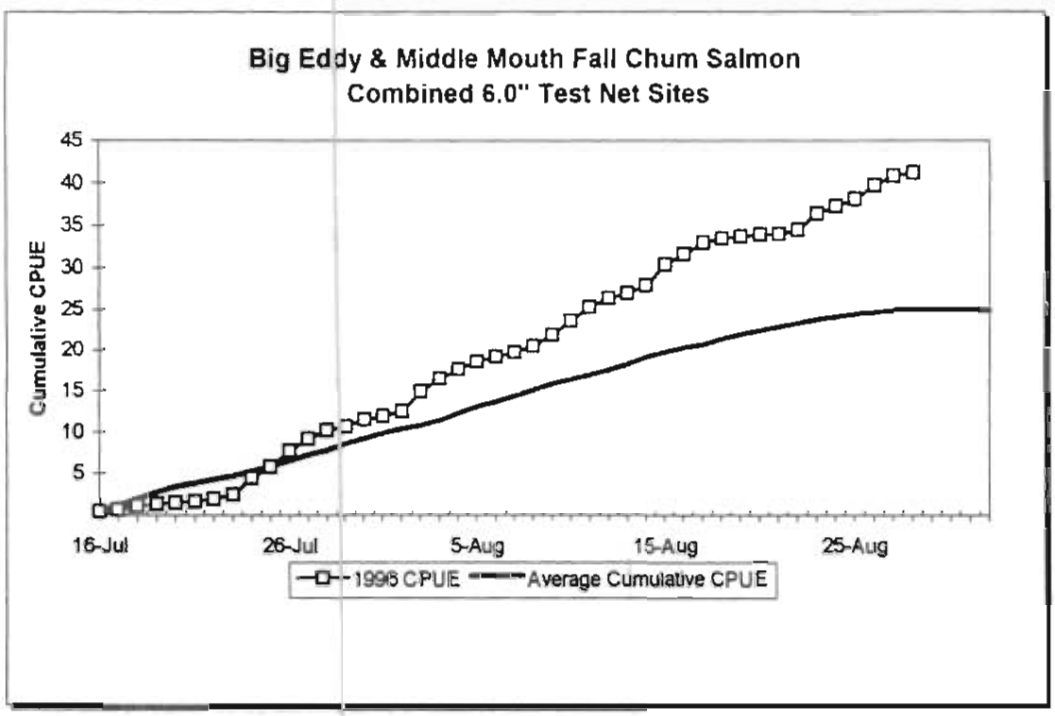
Appendix B.16. Historical daily and cumulative CPUE for fall chum and coho salmon, Lower Yukon River set net test fishery, 1980 to 1993 and 1995 average, compared to 1996.

	Fall Chum Salmon						Coho Salmon					
	1980 to 1993 and 1995 Average			1996			1980 to 1993 and 1995 Average			1996		
Date	Daily CPUE	Prop.	Cumulative CPUE a	Daily CPUE	Prop.	Cumulative CPUE	Daily CPUE	Prop.	Cumulative CPUE a	Daily CPUE	Prop.	Cumulative CPUE
16-Jul	0.46	0.02	0.46	0.35	0.01	0.35	0.00	0.00	0.00	0.00	0.00	0.00
17-Jul	0.63	0.04	1.08	0.29	0.02	0.64	0.00	0.00	0.00	0.00	0.00	0.00
18-Jul	0.86	0.07	1.94	0.48	0.03	1.12	0.00	0.00	0.00	0.01	0.00	0.01
19-Jul	0.78	0.10	2.72	0.13	0.03	1.25	0.00	0.00	0.00	0.00	0.00	0.01
20-Jul	0.66	0.13	3.38	0.13	0.03	1.38	0.00	0.00	0.00	0.00	0.00	0.01
21-Jul	0.43	0.14	3.81	0.15	0.04	1.53	0.00	0.00	0.01	0.00	0.00	0.01
22-Jul	0.43	0.17	4.24	0.31	0.04	1.84	0.00	0.00	0.01	0.00	0.00	0.01
23-Jul	0.39	0.18	4.64	0.58	0.06	2.42	0.00	0.00	0.01	0.02	0.00	0.03
24-Jul	0.60	0.21	5.24	1.98	0.11	4.40	0.00	0.00	0.01	0.23	0.01	0.26
25-Jul	0.57	0.23	5.81	1.35	0.14	5.75	0.00	0.00	0.01	0.18	0.02	0.44
26-Jul	0.72	0.26	6.53	1.93	0.19	7.68	0.00	0.00	0.02	0.33	0.03	0.77
27-Jul	0.68	0.28	7.21	1.47	0.22	9.15	0.01	0.00	0.02	0.23	0.03	1.00
28-Jul	0.56	0.30	7.77	0.97	0.25	10.12	0.02	0.00	0.04	0.14	0.04	1.14
29-Jul	0.78	0.33	8.55	0.48	0.26	10.60	0.02	0.00	0.05	0.36	0.05	1.50
30-Jul	0.67	0.36	9.22	0.86	0.28	11.46	0.03	0.01	0.09	0.43	0.07	1.93
31-Jul	0.57	0.38	9.79	0.39	0.29	11.85	0.04	0.01	0.13	0.28	0.08	2.21
1-Aug	0.54	0.41	10.33	0.58	0.30	12.43	0.06	0.02	0.19	0.44	0.09	2.65
2-Aug	0.45	0.43	10.78	2.41	0.36	14.84	0.05	0.02	0.24	1.04	0.13	3.69
3-Aug	0.59	0.45	11.36	1.53	0.40	16.37	0.07	0.02	0.31	1.07	0.16	4.76
4-Aug	0.87	0.48	12.23	1.16	0.43	17.53	0.10	0.03	0.41	0.54	0.18	5.30
5-Aug	0.75	0.51	12.98	0.94	0.45	18.47	0.12	0.04	0.53	0.46	0.20	5.76
6-Aug	0.66	0.53	13.64	0.64	0.46	19.11	0.11	0.04	0.64	0.36	0.21	6.12
7-Aug	0.69	0.56	14.32	0.52	0.48	19.63	0.22	0.06	0.86	0.44	0.23	6.56
8-Aug	0.71	0.59	15.03	0.78	0.50	20.41	0.33	0.08	1.20	0.54	0.25	7.10
9-Aug	0.73	0.62	15.77	1.42	0.53	21.83	0.40	0.11	1.60	0.73	0.27	7.83
10-Aug	0.57	0.65	16.34	1.66	0.57	23.49	0.28	0.13	1.88	1.25	0.31	9.08
11-Aug	0.48	0.66	16.82	1.69	0.61	25.18	0.40	0.15	2.28	1.64	0.37	10.72
12-Aug	0.65	0.69	17.47	1.11	0.64	26.29	0.50	0.19	2.78	1.97	0.44	12.69
13-Aug	0.71	0.72	18.18	0.60	0.65	26.89	0.55	0.23	3.34	0.57	0.46	13.26
14-Aug	0.84	0.75	19.02	0.97	0.68	27.86	0.89	0.29	4.23	0.70	0.48	13.96
15-Aug	0.66	0.78	19.68	2.43	0.74	30.29	0.84	0.35	5.07	2.00	0.55	15.96
16-Aug	0.51	0.80	20.19	1.22	0.77	31.51	0.68	0.40	5.75	1.45	0.60	17.41
17-Aug	0.38	0.82	20.57	1.44	0.80	32.95	0.63	0.44	6.38	1.00	0.64	18.41
18-Aug	0.66	0.85	21.23	0.49	0.81	33.44	0.98	0.50	7.36	0.63	0.66	19.04
19-Aug	0.59	0.87	21.81	0.17	0.82	33.61	0.89	0.57	8.24	0.42	0.67	19.46
20-Aug	0.45	0.89	22.26	0.24	0.82	33.85	0.75	0.63	9.00	0.42	0.69	19.88
21-Aug	0.45	0.91	22.71	0.10	0.82	33.95	0.71	0.68	9.71	0.43	0.70	20.31
22-Aug	0.51	0.92	23.21	0.44	0.84	34.39	0.70	0.72	10.41	0.70	0.73	21.01
23-Aug	0.45	0.94	23.67	1.92	0.88	36.31	0.80	0.78	11.21	2.18	0.80	23.19
24-Aug	0.32	0.95	23.99	0.86	0.90	37.17	0.66	0.83	11.87	2.00	0.87	25.19
25-Aug	0.28	0.96	24.25	0.88	0.92	38.05	0.49	0.87	12.33	0.85	0.90	26.04
26-Aug	0.33	0.98	24.54	1.60	0.96	39.65	0.68	0.91	12.92	1.03	0.94	27.07
27-Aug	0.24	0.99	24.75	1.09	0.99	40.74	0.59	0.94	13.43	1.02	0.97	28.09
28-Aug	0.14	0.99	24.85	0.42	1.00	41.16	0.37	0.97	13.68	0.81	1.00	28.90
29-Aug	0.12	0.99	24.89				0.32	0.98	13.79			
30-Aug	0.20	1.00	24.95				0.41	1.00	13.92			
31-Aug	0.11	1.00	24.96				0.32	1.00	13.94			
1-Sep	0.09	1.00	24.96				0.16	1.00	13.95			

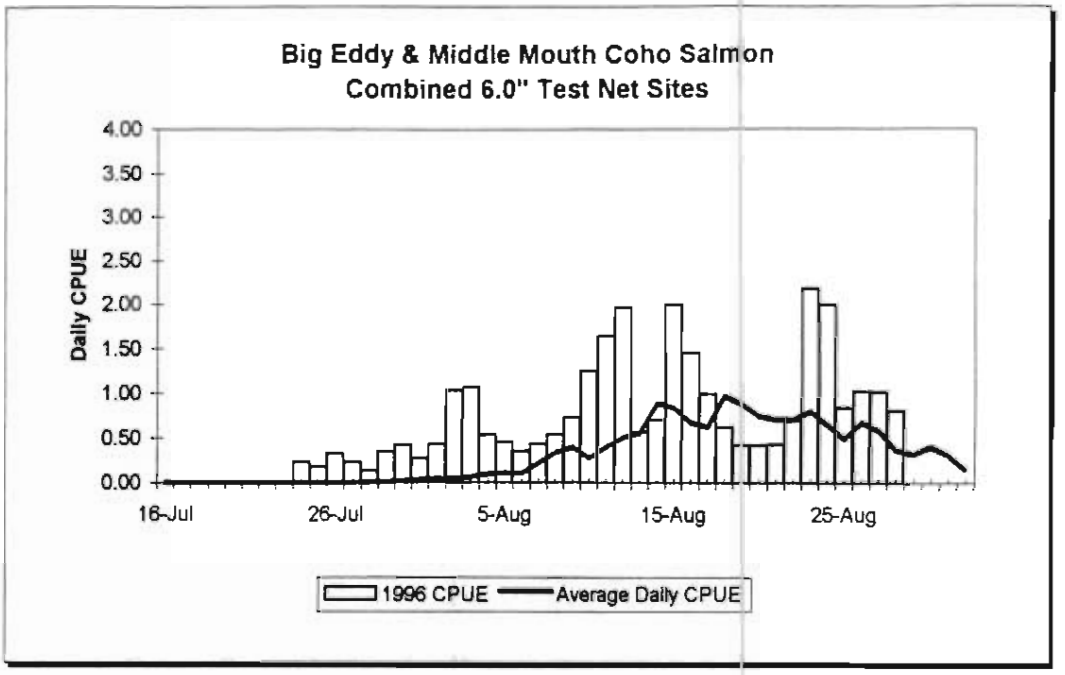
a The box indicates the first to the third quartile of the cumulative CPUE. The center box indicates the median of the cumulative CPUE.

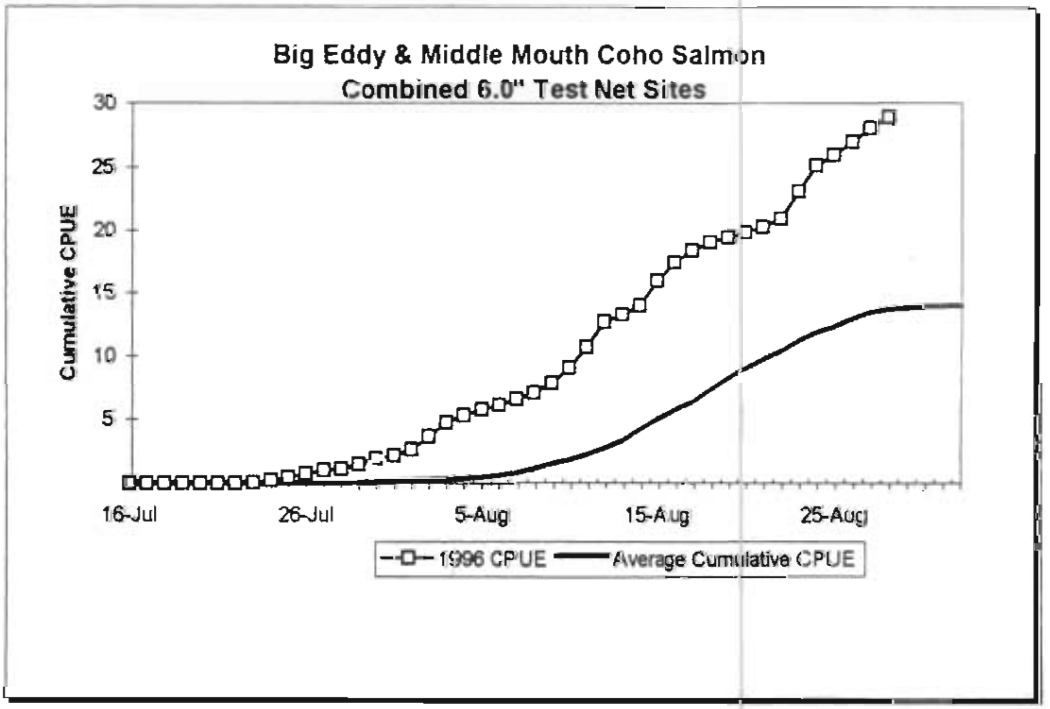
Appendix B.17. Lower Yukon River test fish 1996 daily and cumulative fall chum salmon setnet (6.0 inch mesh) CPUE, compared to the 1980 to 1994 and 1995 average daily and cumulative.





Appendix B.18. Lower Yukon River test fish 1996 daily and cumulative coho salmon setnet (6.0 inch mesh) CPUE, compared to the 1980 to 1994 and 1995 average daily and cumulative.





APPENDIX C

UPPER YUKON AREA SALMON

Appendix C.1. Commercial salmon sales and estimated harvest by statistical area, all gears combined, Upper Yukon Area, 1996. a

BEACH SEINE, PURSE SEINE, SET GILLNET AND FISH WHEEL COMBINED

Statistical Area	Number of Fishermen b	Chinook			Summer Chum			Fall Chum			Coho		
		Number	Roe	Estimated	Number	Roe	Estimated	Number	Roe	Estimated	Number	Roe	Estimated
334-42	20	11	202	103	0	36,927	67,012 c	2,918	0	2,918	161	0	161
334-43	2	34	0	34	0	895	1,627 c	0	0	0	0	0	0
334-44	11	0	0	0	0	31,186	60,802 c	0	0	0	0	0	0
334-45	19	0	0	0	0	40,692	76,268 c	0	0	0	0	0	0
334-46	35	0	0	0	0	109,172	219,868 c	0	0	0	0	0	0
334-47 d	23	0	0	0	0	76,318	84,663	0	0	0	0	0	0
Subtotal District 4	*87*	*45*	*202*	*137*	*0*	*295,190*	*510,240*	*2,918*	*0*	*2,918*	*161*	*0*	*161*
334-51	1	0	0	0	0	0	0	0	181	208	0	0	0
334-52	16	898	455	1,126	0	0	0	5,898	8,317	15,670	0	0	0
334-53	12	1,151	63	1,183	0	188	209	1,583	0	1,583	0	0	0
334-54	1	58	0	58	0	114	127	890	0	890	0	0	0
334-55	1	390	0	390	0	0	0	3,507	0	3,507	0	0	0
Subtotal District 5	*29*	*2,497*	*518*	*2,757*	*0*	*302*	*336*	*11,878*	*8,498*	*21,858*	*0*	*0*	*0*
334-61	2	0	0	0	3,194	0	3,194	663	236	934	182	0	182
334-62	14	110	645	255	12,632	13,139	30,206	8,491	4,906	14,332	3,403	4,571	6,557
334-63	4	168	105	192	6,534	5,193	13,490	1,112	1,031	2,308	218	258	403
Subtotal District 6	*19*	*278*	*750*	*447*	*22,360*	*18,332*	*46,890*	*10,266*	*6,173*	*17,574*	*3,803*	*4,829*	*7,142*
Total Upper Yukon Area	135	2,820	1,470	3,341	22,360	313,824	557,466	25,062	14,671	42,350	3,964	4,829	7,303

a Harvest reported in numbers of fish sold in the round and pounds of salmon roe sold. Unless otherwise noted, the estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold.

b Number of unique permits fished by statistical area, district or area. Totals may not add up due to transfers between statistical areas.

c The estimated harvest of summer chum salmon for District 4, except Statistical Area 334-47 (Anvik River), is the estimated number of males and females harvested to produce the roe sold.

d Statistical Area 334-47 (Anvik River) is the only location beach seines and purse seine gear is allowed.

Appendix C.2. Commercial set gillnet salmon sales and estimated harvest by statistical area, Upper Yukon Area, 1996. a

SET GILLNET

Statistical Area	Number of Fishermen b	Chinook			Summer Chum			Fall Chum			Coho		
		Number	Roe	Estimated	Number	Roe	Estimated	Number	Roe	Estimated	Number	Roe	Estimated
334-42	2	0	164	75	0	11	19 c	0	0	0	0	0	0
334-43	1	34	0	34	0	0	0 c	0	0	0	0	0	0
334-44	5	0	0	0	0	17,510	33,295 c	0	0	0	0	0	0
334-45	5	0	0	0	0	8,645	16,356 c	0	0	0	0	0	0
334-46	3	0	0	0	0	4,623	8,991 c	0	0	0	0	0	0
334-47 d	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal District 4	*16*	*34*	*164*	*109*	*0*	*30,789*	*58,661*	*0*	*0*	*0*	*0*	*0*	*0*
334-51	0	0	0	0	0	0	0	0	0	0	0	0	0
334-52	3	221	96	269	0	0	0	0	295	348	0	0	0
334-53	8	753	0	753	0	188	209	1,011	0	1,011	0	0	0
334-54	0	0	0	0	0	0	0	0	0	0	0	0	0
334-55	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal District 5	*11*	*974*	*96*	*1,022*	*0*	*188*	*209*	*1,011*	*295*	*1,359*	*0*	*0*	*0*
334-61	0	0	0	0	0	0	0	0	0	0	0	0	0
334-62	0	0	0	0	0	0	0	0	0	0	0	0	0
334-63	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal District 6	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Upper Yukon Area	27	1,008	260	1,131	0	30,977	58,870	1,011	295	1,359	0	0	0

a Harvest reported in numbers of fish sold in the round and pounds of salmon roe sold. Unless otherwise noted, the estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold.

b Number of unique permits fished by statistical area, district or area. Totals may not add up due to transfers between statistical areas.

c The estimated harvest of summer chum salmon for District 4, except Statistical Area 334-47 (Anvik River), is the estimated number of males and females harvested to produce the roe sold.

d Does not include 22 beach seine fishermen that harvested 68,464 pounds of chum salmon roe with an estimated harvest of 75,915 chum salmon; and 1 purse seine fishermen that harvested 7,854 pounds of chum salmon roe with an estimated harvest of 8,748 chum salmon.

Appendix C.3. Commercial fish wheel salmon sales and estimated harvest by statistical area, Upper Yukon Area, 1996. a

FISH WHEEL

Statistical Area	Number of Fishermen b	Chinook			Summer Chum			Fall Chum			Coho		
		Number	Roe	Estimated	Number	Roe	Estimated	Number	Roe	Estimated	Number	Roe	Estimated
334-42	18	11	38	28	0	36,916	66,993 c	2,918	0	2,918	161	0	161
334-43	1	0	0	0	0	895	1,627 c	0	0	0	0	0	0
334-44	6	0	0	0	0	13,676	27,507 c	0	0	0	0	0	0
334-45	14	0	0	0	0	32,047	59,912 c	0	0	0	0	0	0
334-46	32	0	0	0	0	104,549	210,877 c	0	0	0	0	0	0
334-47 d	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal District 4	*67*	*11*	*38*	*28*	*0*	*188,083*	*366,916*	*2,918*	*0*	*2,918*	*161*	*0*	*161*
334-51	1	0	0	0	0	0	0	0	181	208	0	0	0
334-52	11	677	359	857	0	0	0	5,898	8,022	15,322	0	0	0
334-53	4	398	63	430	0	0	0	572	0	572	0	0	0
334-54	1	58	0	58	0	114	127	890	0	890	0	0	0
334-55	1	390	0	390	0	0	0	3,507	0	3,507	0	0	0
Subtotal District 5	*18*	*1,523*	*422*	*1,735*	*0*	*114*	*127*	*10,867*	*8,203*	*20,499*	*0*	*0*	*0*
334-61	2	0	0	0	3,194	0	3,194	663	236	934	182	0	182
334-62	15	110	645	785	12,632	13,139	30,206	8,491	4,906	14,332	3,403	4,571	6,557
334-63	4	168	105	192	6,534	5,193	13,490	1,112	1,031	2,308	218	258	403
Subtotal District 6	*19*	*278*	*750*	*447*	*22,360*	*18,332*	*46,890*	*10,266*	*6,173*	*17,574*	*3,803*	*4,829*	*7,142*
Total Upper Yukon Area	104	1,812	1,210	2,210	22,360	206,529	413,933	24,051	14,376	40,991	3,964	4,829	7,303

a Harvest reported in numbers of fish sold in the round and pounds of salmon roe sold. Unless otherwise noted, the estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold.

b Number of unique permits fished by statistical area, district or area. Totals may not add up due to transfers between statistical areas.

c The estimated harvest of summer chum salmon for District 4, except Statistical Area 334-47 (Anvik River), is the estimated number of males and females harvested to produce the roe sold.

d Does not include 22 beach seine fishermen that harvested 68,464 pounds of chum salmon roe with an estimated harvest of 75,915 chum salmon; and 1 purse seine fishermen that harvested 7,854 pounds of chum salmon roe with an estimated harvest of 8,748 chum salmon.

Appendix C.4. Commercial chinook salmon sales and estimated harvest by statistical area, Subdistrict 4-A, Upper Yukon Area, 1974 - 1996.

Year	334-41			334-44			334-45			334-46			Total		
	Number a	Roe b	Estimated c	Number a	Roe b	Estimated c	Number a	Roe b	Estimated c	Number a	Roe b	Estimated c	Number a	Roe b	Estimated c
1974	0	-	0	-	-	-	-	-	-	-	-	-	0	-	0
1975	15	-	15	-	-	-	-	-	-	-	-	-	15	-	15
1976	44	-	44	-	-	-	-	-	-	-	-	-	44	-	44
1977	317	-	317	-	-	-	-	-	-	-	-	-	317	-	317
1978	183	-	183	-	-	-	-	-	-	-	-	-	183	-	183
1979	785	-	785	-	-	-	-	-	-	-	-	-	785	-	785
1980	352	-	352	-	-	-	-	-	-	-	-	-	352	-	352
1981	106	-	106	-	-	-	-	-	-	-	-	-	106	-	106
1982	78	-	78	-	-	-	-	-	-	-	-	-	78	-	78
1983	0	-	0	-	-	-	-	-	-	-	-	-	0	-	0
1984	2	-	2	-	-	-	-	-	-	-	-	-	2	-	2
1985	0	-	0	-	-	-	-	-	-	-	-	-	0	-	0
1986	11	-	11	-	-	-	-	-	-	-	-	-	11	-	11
1987	91	-	91	-	-	-	-	-	-	-	-	-	91	-	91
1988	19	-	19	-	-	-	-	-	-	-	-	-	19	-	19
1989	59	-	59	-	-	-	-	-	-	-	-	-	59	-	59
1990 d	-	-	-	0	8	2	0	0	0	52	0	52	52	8	54
1991	-	-	-	0	67	35	0	7	4	69	88	114	69	162	153
1992	-	-	-	0	0	0	0	15	9	0	71	41	0	86	50
1993	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
1994	-	-	-	0	0	0	0	0	0	0	14	7	0	14	7
1995	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
1996	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
5 Year Ave. 1991-1995	-	-	-	0	13	7	0	4	3	14	35	32	14	52	42

[a] Harvest reported in numbers of fish sold in the round.

[b] Pounds of salmon roe sold. Since 1990, efforts were made to separate chinook salmon roe from the summer chum salmon roe sold.

[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produce the roe sold is based on a District 4 sampling program that estimated average roe weight per female by statistical area, by period and gear type.

[d] In 1990, Subdistrict 4-A (Statistical Area 334-41) was subdivided into Statistical Areas 334-44, 334-45 and 334-46.

Appendix C.5. Commercial chinook salmon sales and estimated harvest by statistical area, Subdistricts 4-B and 4-C, Upper Yukon Area, 1974 - 1996.

Year	334-42			334-43			Total		
	Number a	Roe b	Estimated c	Number a	Roe b	Estimated c	Number a	Roe b	Estimated c
1974	685	-	685	-	-	-	685	-	685
1975	374	-	374	-	-	-	374	-	374
1976	365	-	365	-	-	-	365	-	365
1977	668	-	668	-	-	-	668	-	668
1978	425	-	425	-	-	-	425	-	425
1979 d	370	-	370	834	-	834	1,204	-	1,204
1980	549	-	549	620	-	620	1,169	-	1,169
1981	867	-	867	374	-	374	1,241	-	1,241
1982	497	-	497	512	-	512	1,009	-	1,009
1983	382	-	382	219	-	219	601	-	601
1984	272	-	272	687	-	687	959	-	959
1985	318	-	318	346	-	346	664	-	664
1986	100	-	100	391	-	391	491	-	491
1987	999	-	999	434	-	434	1,433	-	1,433
1988	1,599	-	1,599	1,541	-	1,541	3,140	-	3,140
1989	696	-	696	2,035	-	2,035	2,731	-	2,731
1990	784	0	784	2,700	0	2,700	3,484	0	3,484
1991	916	386	1,113	1,461	1,674	2,316	2,377	2,060	3,429
1992	623	482	818	1,028	1,705	1,526	1,651	2,187	2,344
1993	190	279	269	1,159	422	1,308	1,349	701	1,577
1994	389	374	539	1,827	176	1,897	2,216	550	2,436
1995	262	30	262	0	596	237	262	626	499
1996	11	202	103	34	0	34	45	202	137
5 Year Ave. 1991-1995	476	-	600	1,095	-	1,457	1,571	-	2,057

a Harvest reported in numbers of fish sold in the round.

b Pounds of salmon roe sold. Since 1990, efforts were made to separate chinook salmon roe from the summer chum salmon roe sold.

c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produce the roe sold is based on a District 4 sampling program that estimated average roe weight per female by statistical area, by period and gear type.

d In 1979, Statistical Area 334-42 was subdivided into Statistical Areas 334-42 and 334-43.

Appendix C.6. Commercial chinook salmon sales and estimated harvest by statistical area, Subdistricts 5-A, 5-B and 5-C, Upper Yukon Area, 1974 - 1996.

Year	334-51			334-52			334-53			Total		
	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]
1974	2,284	-	2,284	379	-	379	-	-	-	[illegible]	-	2,663
1975	[illegible]	-	2,602	270	-	270	-	-	-	2,872	-	2,872
1976	2,843	-	2,843	308	-	308	-	-	-	3,151	-	3,151
1977	4,013	-	4,013	149	-	149	-	-	-	4,162	-	4,162
1978	2,838	-	2,838	241	-	241	-	-	-	3,079	-	3,079
1979	3,389	-	3,389	0	-	0	-	-	-	3,389	-	3,389
1980	4,554	-	4,554	337	-	337	-	-	-	4,891	-	4,891
1981 [d]	97	-	97	3,051	-	3,051	2,477	-	2,477	5,625	-	5,625
1982	61	-	61	2,352	-	2,352	2,277	-	2,277	4,690	-	4,690
1983	0	-	0	632	-	632	2,738	-	2,738	3,370	-	3,370
1984	128	-	128	1,589	-	1,589	1,568	-	1,568	3,285	-	3,285
1985	0	-	0	1,142	-	1,142	1,842	-	1,842	2,984	-	2,984
1986	0	-	0	1,552	-	1,552	875	-	875	2,427	-	2,427
1987	0	-	0	1,183	-	1,183	1,356	-	1,356	2,539	-	2,539
1988	0	-	0	1,498	-	1,498	1,477	-	1,477	2,975	-	2,975
1989	31	-	31	1,411	-	1,411	1,459	-	1,459	2,901	-	2,901
1990	0	0	0	1,630	47	1,642	1,180	0	1,180	2,810	47	2,822
1991	56	0	56	1,724	62	1,740	1,476	0	1,476	3,256	62	3,272
1992	0	0	0	1,276	7	1,279	2,119	0	2,119	3,395	7	3,398
1993	0	0	0	1,124	0	1,124	1,484	0	1,484	2,608	0	2,608
1994	0	0	0	1,648	10	1,653	1,641	0	1,641	3,289	10	3,294
1995	0	0	0	1,519	0	1,519	1,234	0	1,234	2,753	0	2,753
1996	0	0	0	898	455	1,216	1,151	63	1,183	2,049	518	2,399
5 Year Ave. 1991-1995	11	0	11	1,458	16	1,463	1,591	0	1,591	3,060	16	3,065

[a] Harvest reported in numbers of fish sold in the round. Does not include estimates of illegal sales in 1987 of 653 chinook salmon.

[b] Pounds of salmon roe sold. Since 1990, efforts were made to separate chinook salmon roe from the summer chum salmon roe sold.

[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produce the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.

[d] In 1981, Subdistrict 5-A (Statistical Area 334-51) and Subdistrict 5-B (Statistical Area 334-52) were subdivided to include two additional subdistricts, Subdistrict 5-C (Statistical Area 334-53) and Subdistrict 5-D (Statistical Area 334-54).

Appendix C.7. Commercial chinook salmon sales and estimated harvest by statistical area, Subdistrict 5-D, Upper Yukon Area, 1974 - 1996.

Year	334-54			334-55			Total		
	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]
1974	-	-	-	-	-	-	-	-	-
1975	-	-	-	-	-	-	-	-	-
1976	-	-	-	-	-	-	-	-	-
1977	-	-	-	-	-	-	-	-	-
1978	-	-	-	-	-	-	-	-	-
1979	-	-	-	-	-	-	-	-	-
1980	-	-	-	-	-	-	-	-	-
1981 [d]	749	-	749	-	-	-	749	-	749
1982	695	-	695	-	-	-	695	-	695
1983	236	-	236	-	-	-	236	-	236
1984	384	-	384	-	-	-	384	-	384
1985	434	-	434	-	-	-	434	-	434
1986	306	-	306	-	-	-	306	-	306
1987	566	-	566	-	-	-	566	-	566
1988	461	-	461	-	-	-	461	-	461
1989	385	-	385	-	-	-	385	-	385
1990 [e]	194	0	194	349	0	349	543	0	543
1991	192	0	192	362	0	362	554	0	554
1992	0	0	0	457	0	457	457	0	457
1993	0	0	0	400	0	400	400	0	400
1994	0	0	0	450	0	450	450	0	450
1995	0	0	0	489	0	489	489	0	489
1996	58	0	58	390	0	390	448	0	448
5 Year Ave. 1991-1995	38	0	38	432	0	432	470	0	470

[a] Harvest reported in numbers of fish sold in the round.

[b] Pounds of salmon roe sold. Since 1990, efforts were made to separate chinook salmon roe from the summer chum salmon roe sold.

[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produce the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.

[d] In 1981, Subdistrict 5-A (Statistical Area 334-51) and Subdistrict 5-B (Statistical Area 334-52) was subdivided to include two additional subdistricts, Subdistrict 5-C (statistical Area 334-53) and Subdistrict 5-D (Statistical Area 334-54).

[e] In 1990, Subdistrict 5-D (Statistical Area 334-54) was subdivided into two statistical areas, (Statistical Areas 334-54 and 334-55).

Appendix C.8. Commercial chinook salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1974 - 1996.

Year	334-61			334-62			334-63			Total		
	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]
1974	111	-	111	1,102	-	1,102	260	-	260	1,473	-	1,473
1975	77	-	77	153	-	153	270	-	270	500	-	500
1976	490	-	490	320	-	320	292	-	292	1,102	-	1,102
1977	405	-	405	365	-	365	238	-	238	1,008	-	1,008
1978	34	-	34	58	-	58	543	-	543	635	-	635
1979	102	-	102	336	-	336	334	-	334	772	-	772
1980	92	-	92	1,588	-	1,588	267	-	267	1,947	-	1,947
1981	438	-	438	366	-	366	183	-	183	987	-	987
1982	414	-	414	309	-	309	258	-	258	981	-	981
1983	249	-	249	364	-	364	298	-	298	911	-	911
1984	0	-	0	375	-	375	492	-	492	867	-	867
1985	15	-	15	560	-	560	567	-	567	1,142	-	1,142
1986	0	-	0	597	-	597	353	-	353	950	-	950
1987	0	-	0	600	-	600	602	-	602	1,202	-	1,202
1988	305	-	305	253	-	253	204	-	204	762	-	762
1989	809	-	809	614	-	614	318	-	318	1,741	-	1,741
1990	326	0	326	1,243	1,354	1,565	188	322	265	1,757	1,676	2,156
1991	117	0	117	450	1,365	791	119	180	164	686	1,545	1,072
1992	39	0	39	371	679	510	162	205	204	572	884	753
1993	57	0	57	810	1,213	1,116	246	100	272	1,113	1,313	1,445
1994	0	0	0	1,941	1,513	2,333	194	307	273	2,135	1,820	2,606
1995	0	110	26	1,418	3,783	2,287	242	838	434	1,660	4,731	2,747
1996	0	0	0	110	645	255	168	105	192	278	750	447
5 Year Ave. 1991-1995	43	22	48	998	1,711	1,407	193	326	269	1,233	2,059	1,725

[a] Harvest reported in numbers of fish sold in the round. Does not include estimates of illegal sales in 1987 of 2,136 chinook salmon.

[b] Pounds of salmon roe sold. Since 1990, efforts were made to separate chinook salmon roe from the summer chum salmon roe sold.

[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produce the roe sold is based on a District 6 sampling program that estimated average roe weight per female by period.

Appendix C.9. Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistrict 4-A, Upper Yukon Area, 1974 - 1996.

Year	334-41					334-44					334-45				
		Roe Expansion					Roe Expansion					Roe Expansion			
	Number a	Roe b	Males c	Females d	Estimated Harvest e	Number a	Roe b	Males c	Females d	Estimated Harvest e	Number a	Roe b	Males c	Females d	Estimated Harvest e
1974	f	0	0	0	f	-	-	-	-	-	-	-	-	-	-
1975	f	0	0	0	f	-	-	-	-	-	-	-	-	-	-
1976	f	0	0	0	f	-	-	-	-	-	-	-	-	-	-
1977	f	0	0	0	f	-	-	-	-	-	-	-	-	-	-
1978	f	16,920	0	16,920	f	-	-	-	-	-	-	-	-	-	-
1979	f	35,117	0	35,117	f	-	-	-	-	-	-	-	-	-	-
1980	f	119,957	0	119,957	f	-	-	-	-	-	-	-	-	-	-
1981	f	160,757	123,266 g	160,757	f	-	-	-	-	-	-	-	-	-	-
1982	1,032	137,611	95,788	137,611	234,431	-	-	-	-	-	-	-	-	-	-
1983	3,407	130,013	90,740	130,013	224,160	-	-	-	-	-	-	-	-	-	-
1984	51	148,519	98,962	148,519	247,532	-	-	-	-	-	-	-	-	-	-
1985	5,130	222,149	157,062	222,149	384,341	-	-	-	-	-	-	-	-	-	-
1986	0	236,856	172,222	236,856	409,078	-	-	-	-	-	-	-	-	-	-
1987	29,314	110,977	51,379	110,977	191,670	-	-	-	-	-	-	-	-	-	-
1988	19,070	230,276	167,594	256,718 h	443,382	-	-	0	-	-	-	-	-	-	-
1989	14,197	270,039	170,322	301,383 i	486,102	-	-	-	-	-	-	-	-	-	-
1990 j	-	-	-	-	-	5	27,028	24,484	31,409	55,893	427	28,181	24,153	32,166	56,746
1991	-	-	-	-	-	88	39,281	37,164	47,574	84,826	79	43,087	42,445	53,401	95,926
1992	-	-	-	-	-	0	20,444	13,192	22,383	35,575	0	35,312	20,463	40,142	60,605
1993	-	-	-	-	-	0	6,234	4,308	7,334	11,642	0	6,081	4,246	7,230	11,476
1994 k	-	-	-	-	-	0	18,095	12,937	22,606	35,543	0	15,091	11,031	19,276	30,307
1995	-	-	-	-	-	0	37,595	37,575	48,084	83,659	0	49,577	49,149	56,667	105,816
1996	-	-	-	-	-	0	31,186	26,210	34,592	60,802	0	40,692	30,785	45,483	76,268
5 Year Ave. 1991-1995	-	-	-	-	-	18	24,330	-	-	50,249	18	29,830	-	-	62,026

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Appendix C.9. (Page 2 of 2)

Year	334-46 Number a	334-46 Roe Expansion Roe b	334-46 Roe Expansion Males c	334-46 Roe Expansion Females d	334-46 Estimated Harvest e	334-47 Number a	334-47 Roe Expansion Roe b	334-47 Roe Expansion Males c	334-47 Roe Expansion Females d	334-47 Estimated Harvest e	Total Number a	Total Roe Expansion Roe b	Total Roe Expansion Males c	Total Roe Expansion Females d	Total Estimated Harvest e
1974	-	-	-	-	-	-	-	-	-	-	f	0	0	0	f
1975	-	-	-	-	-	-	-	-	-	-	f	0	0	0	f
1976	-	-	-	-	-	-	-	-	-	-	f	0	0	0	f
1977	-	-	-	-	-	-	-	-	-	-	f	0	0	0	f
1978	-	-	-	-	-	-	-	-	-	-	f	16,920	0	16,920	f
1979	-	-	-	-	-	-	-	-	-	-	f	35,117	0	35,117	f
1980	-	-	-	-	-	-	-	-	-	-	f	119,957	0	119,957	f
1981	-	-	-	-	-	-	-	-	-	-	f	160,757	123,266 g	160,757	f
1982	-	-	-	-	-	-	-	-	-	-	1,032	137,611	95,788	137,611	234,431
1983	-	-	-	-	-	-	-	-	-	-	3,407	130,013	90,740	130,013	224,160
1984	-	-	-	-	-	-	-	-	-	-	51	148,519	98,962	148,519	247,532
1985	-	-	-	-	-	-	-	-	-	-	5,130	222,149	157,062	222,149	384,341
1986	-	-	-	-	-	-	-	-	-	-	0	236,856	172,222	236,856	409,078
1987	-	-	-	-	-	-	-	-	-	-	29,314	110,977	51,379	110,977	191,670
1988	-	-	-	-	-	-	-	-	-	-	19,070	230,276	167,594	258,718 h	443,382
1989	-	-	-	-	-	-	-	-	-	-	14,397	270,039	170,322	301,383 i	486,102
1990 j	10,750	39,732	29,490	44,742	84,982	-	-	-	-	-	11,182	95,541	78,127	108,316	197,621
1991	5,122	45,863	47,563	56,819	109,504	-	-	-	-	-	5,289	128,231	127,172	157,794	290,255
1992	0	43,945	32,502	49,489	81,991	-	-	-	-	-	0	99,701	72,158	112,013	184,171
1993	0	8,170	5,579	9,499	15,078	-	-	-	-	-	0	20,485	14,133	24,063	38,196
1994 k	0	29,615	28,825	37,119	65,944	0	19,532	0	22,574	22,574	0	82,333	52,794	101,574	154,368
1995	0	102,080	105,663	124,550	230,213	0	48,477	0	54,744	54,744	0	237,729	192,387	282,045	474,432
1996	0	109,172	98,926	120,942	219,868	0	76,318	0	84,663	84,663	0	257,368	155,921	285,680	441,601
5 Year Ave. 1991-1995	1,024	45,935	-	-	100,546	-	-	-	-	-	1,058	113,698	91,729	135,498	228,284

a Harvest reported in numbers of fish sold in the round.

b Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of chinook salmon roe. Since 1990, efforts were made to separate chinook salmon roe from the summer chum salmon roe sold.

c The estimated number of unsold males that were caught and not sold while harvesting the females that produced the roe sold. Prior to 1981, it was assumed that all males were sold in the round. Since 1981, all fish sold in the round are assumed to be males. For the years 1981 through 1985, the estimated percentage of males in the harvest was based on percentage of males observed in the department Stink Creek test fish wheel catches (1981 - .434; 1982 - .413; 1983-.420; 1984-.400; and 1985 - .422). For the years 1986 through 1988, the estimated number of males in the harvest was based on the average percentage of males observed in the Stink Creek test fishery for the years 1981 through 1985 (average of .421). For the year 1989, the estimated percentage of males in the harvest was .38. Since 1990, the estimated number of unsold males that produce the roe sold is based on a District 4 sampling program that estimated average percent males in the harvest by statistical area, by period and gear type.

d The estimated number of females to produce the roe sold. Unless otherwise noted, prior to 1991, the roe expansion assumes 1.0 pound of roe per female. Since 1991, the estimated number of females that produce the roe sold is based on a District 4 sampling program that estimated average roe weight per female by statistical area, by period and gear type.

e Estimated harvest is the number of fish sold in the round plus the estimated number of females and the estimated number of unsold males harvested to produce the roe sold.

f Information not available.

g Assumes no males were sold in the round.

h Roe expansion assumes .897 pound of roe per female.

i Roe expansion assumes .896 pound of roe per female.

j In 1990, Subdistrict 4-A (Statistical Area 334-41) was subdivided into Statistical Areas 334-44, 334-45 and 334-46.

k In 1994, Statistical Area 334-47 was included in Subdistrict 4-A and it represents the Anvik River Management Area.

Appendix C.10. Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistricts 4-B and 4-C, Upper Yukon Area, 1974-1996.

	334-42				334-43				Total				
		Roe Expansion		Estimated		Roe Expansion		Estimated		Roe Expansion			Estimated
Year	Number a	Roe b	Females c	Harvest e	Number a	Roe b	Females c	Harvest e	Number a	Roe b	Females c	Males d	Harvest e
1974	g	0	0	g	-	-	-	-	g	0	0	0	g
1975	g	0	0	g	-	-	-	-	g	0	0	0	g
1976	g	0	0	g	-	-	-	-	g	0	0	0	g
1977	g	0	0	g	-	-	-	-	g	0	0	0	g
1978	g	0	0	g	-	-	-	-	g	0	0	0	g
1979 h	g	200	200	g	g	0	0	g	g	200	200	g	g
1980	g	14,385	14,385	g	g	1,482	1,482	g	g	15,867	15,867	g	g
1981	g	23,677	23,677	g	g	2,598	2,598	g	g	26,275	26,275	g	g
1982	1,059	12,550	12,550	13,609	1,556	1,120	1,120	2,676	2,615	13,670	13,670	7,003	23,288
1983	3,265	17,549	17,549	20,814	0	563	563	563	3,265	18,112	18,112	9,851	31,228
1984	659	15,184	15,184	15,843	299	3,139	3,139	3,438	958	18,323	18,323	11,257	30,538
1985	1,785	19,306	19,306	21,091	5,092	5,630	5,630	10,722	6,877	24,936	24,936	11,329	43,142
1986	241	29,169	29,169	29,410	59	3,520	3,520	3,579	300	32,689	32,689	23,468	56,457
1987	593	9,956	9,956	10,549	84	541	541	625	677	10,497	10,497	6,956	18,130
1988	4,592	21,766	24,265 l	26,358	389	2,484	2,769 l	3,158	4,981	24,250	27,034 l	14,677	46,692
1989	2,940	9,915	11,066 k	12,855	1,217	3,351	3,740 k	4,957	4,157	13,266	14,806 k	5,179	24,142
1990	1,091	6,600	7,799	8,890	96	3,582	4,434	4,530	1,187	10,182	12,233	11,509	24,929
1991	1,092	8,282	8,996	10,088	0	719	781	781	1,092	9,001	9,777	8,520	19,389
1992	1,363	9,010	9,616	10,979	1,296	2,098	2,902	4,198	2,659	11,108	12,518	12,048	27,225
1993	0	1,851	2,134	4,445	27	111	140	316	27	1,962	2,274	2,460	4,761
1994	2,844	6,455	g	14,803	767	929	g	2,436	3,611	7,384	g	g	17,239
1995	8,873	39,699	g	73,570	0	3,646	g	6,585	8,873	43,345	g	g	80,155
1996	0	36,927	39,156	67,012	0	895	939	1,627	0	37,822	40,095	28,544	68,639
5 Year Ave.													
1991-1995	2,834	13,059	4,149	22,777	418	1,501	765	2,863	3,252	14,560	4,914	4,606	29,754

a Harvest reported in numbers of fish sold in the round.

b Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of chinook salmon roe. Since 1990, efforts were made to seperate chinook salmon roe from the summer chum salmon sold.

c The estimated number of females to produce the roe sold. Unless otherwise noted, prior to 1991, the roe expansion assumed 1.0 pound of roe per female. Since 1990, the estimated number of female that produce the roe sold is based on a District 4 sampling program that estimated average roe weight per female by statistical area, by period and gear type.

d Estimated number of males caught but not sold. Total males caught but not sold calculated the same as for District 4-A (using sex ratio and sales in the round assumed to be male chum salmon).

e The total estimated harvest is the fish sold in the round plus estimated number of females harvested to produce roe sold plus the estimated number of males caught but not sold.

g Information not available by statistical area.

h In 1979, Statistical Area 334-42 was subdivided into Statistical Areas 334-42 and 334-43.

l Roe expansion assumes .897 pound of roe per female.

k Roe expansion assumes .896 pound of roe per female.

Appendix C.11. Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistricts 5-A, 5-B and 5-C, Upper Yukon Area, 1974 - 1996.

Year	334-51			334-52			334-53			Total		
	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]
1974	[d]	0	[d]	[d]	0	[d]	-	-	-	6,831	0	6,831
1975	[d]	0	[d]	[d]	0	[d]	-	-	-	12,997	0	12,997
1976	[d]	0	[d]	[d]	0	[d]	-	-	-	774	0	774
1977	[d]	0	[d]	[d]	0	[d]	-	-	-	1,274	0	1,274
1978	[d]	605	[d]	[d]	0	[d]	-	-	-	4,892	605	5,497
1979	[d]	1,009	[d]	[d]	0	[d]	-	-	-	8,608	1,009	9,617
1980	[d]	0	[d]	[d]	0	[d]	-	-	-	456	0	456
1981 [e]	[d]	0	[d]	[d]	49	[d]	[d]	0	[d]	1,236	49	1,285
1982	[d]	21	[d]	[d]	0	[d]	[d]	0	[d]	213	21	234
1983	0	242	242	37	269	306	5	1,345	1,350	42	1,856	1,898
1984	50	0	50	578	47	625	12	0	12	640	47	687
1985	0	0	0	700	0	700	0	0	0	700	0	700
1986	0	0	0	682	0	682	8	0	8	690	0	690
1987	0	0	0	362	44	406	0	0	0	362	44	406
1988	0	0	0	717	337	1,054	5	26	31	722	363	1,085
1989	0	0	0	112	204	316	1	169	170	113	373	486
1990	0	0	0	0	225	250	5	350	394	5	575	644
1991	0	0	0	0	28	31	4	0	4	4	28	35
1992	0	0	0	30	295	358	72	0	72	102	295	430
1993	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	133	212	368	96	0	96	229	212	464
1995	0	0	0	0	188	209	107	0	107	107	188	316
1996	0	0	0	0	0	0	0	188	209	0	188	209
5 Year Ave. 1991-1995	0	0	0	33	145	193	56	0	56	88	145	249

[a] Harvest reported in numbers of fish sold in the round.

[b] Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of chinook roe. Since 1990, efforts were made to separate chinook roe from the summer chum salmon roe sold.

[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to1990, the roe expansion assumed 1.0 pound of roe per female. Since 1990, the estimated number of females that produced the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.

[d] Information not available.

[e] In 1981, Subdistrict 5-A (Statistical Area 334-51) and Subdistrict 5-B (statistical Area 334-52) were subdivided to include two additional subdistricts, Subdistrict 5-C (Statistical Area 334-53) and Subdistrict 5-D (Statistical Area 334-54). In 1990, Subdistrict 5-D (Statistical Area 333-54) was further subdivided into Statistical Areas 334-54 and 334-55.

Appendix C.12. Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistrict 5-D, Upper Yukon Area, 1974 -

Year	334-54			334-55			Total		
	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]
1974	-	-	-	-	-	-	-	-	-
1975	-	-	-	-	-	-	-	-	-
1976	-	-	-	-	-	-	-	-	-
1977	-	-	-	-	-	-	-	-	-
1978	-	-	-	-	-	-	-	-	-
1979	-	-	-	-	-	-	-	-	-
1980	-	-	-	-	-	-	-	-	-
1981 [d]	e	0	e	-	-	-	e	0	e
1982	e	0	e	-	-	-	e	0	e
1983	0	0	0	-	-	-	0	0	0
1984	5	0	5	-	-	-	5	0	5
1985	0	0	0	-	-	-	0	0	0
1986	0	0	0	-	-	-	0	0	0
1987	0	0	0	-	-	-	0	0	0
1988	0	0	0	-	-	-	0	0	0
1989	41	0	41	-	-	-	41	0	41
1990 [f]	6	19	27	0	0	0	6	19	27
1991	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0
1996	0	114	127	0	0	0	0	114	127
5 Year Ave. 1991-1995	0	0	0	0	0	0	0	0	0

[a] Harvest reported in numbers of fish sold in the round.

[b] Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of chinook salmon roe. Since 1990, efforts were made to separate chinook salmon roe from the summer chum salmon roe sold.

[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pound of roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.

[d] In 1981, Subdistrict 5-A (Statistical Area 334-51) and Subdistrict 5-B (Statistical Area 334-52) were subdivided to include two additional subdistricts, Subdistrict 5-C (Statistical Area 334-53) and Subdistrict 5-D (Statistical Area 334-54).

[e] Information not available.

[f] In 1990, Subdistrict 5-D (Statistical Area 334-54) was subdivided into two statistical areas, (Statistical Areas 334-54 and 334-55).

Appendix C.13. Commercial summer chum salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1974 - 1996.

Year	334-61			334-62			334-63			Total		
	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]
1974	[d]	0	[d]	[d]	0	[d]	[d]	0	[d]	13,318	0	13,318
1975	[d]	0	[d]	[d]	0	[d]	[d]	0	[d]	14,782	0	14,782
1976	[d]	0	[d]	[d]	0	[d]	[d]	0	[d]	6,617	0	6,617
1977	[d]	0	[d]	[d]	0	[d]	[d]	0	[d]	4,317	0	4,317
1978	[d]	1,468 [d]	[d]	[d]	6,116 [d]	[d]	[d]	652 [d]	[d]	34,814	8,236	43,050
1979	[d]	0	[d]	[d]	2,272	[d]	[d]	1,010	[d]	18,491	3,891	22,382
1980	[d]	0	[d]	[d]	925	[d]	[d]	1,062	[d]	35,855	3,282	39,137
1981	[d]	0	[d]	[d]	1,027	[d]	[d]	490	[d]	32,477	1,987	34,464
1982	[d]	0	[d]	[d]	1,027	[d]	[d]	490	[d]	21,597	1,517	23,114
1983	1,923	0	1,923	21,646	18	21,664	740	0	740	24,309	18	24,327
1984	3,769	0	3,769	42,231	152	42,383	10,249	183	10,432	56,249	335	56,584
1985	809	0	809	51,132	142	51,274	14,972	1,398	16,370	66,913	1,540	68,453
1986	4,697	0	4,697	31,647	1,711	33,358	14,139	435	14,574	50,483	2,146	52,629
1987	2,167	0	2,167	6,882	349	7,231	1,561	101	1,662	10,610	450	11,060
1988	7,978	71	8,049	24,911	1,165	26,076	7,240	410	7,650	40,129	1,646	41,775
1989	16,483	61	16,544	18,960	4,277	23,237	6,672	533	7,205	42,115	4,871	46,986
1990	2,862	12	2,877	6,028	1,637	8,011	2,237 [e]	1,410	3,945	11,127 [e]	3,059	14,833
1991	4,742	0	4,742	10,100	2,653	13,304	3,355	2,063	5,846	18,197	4,716	23,892
1992	1,327	0	1,327	3,446	1,684	5,409	256	208	492	5,029	1,892	7,228
1993	1,156	0	1,156	1,603	315	2,009	282	200	540	3,041	515	3,705
1994	5,114	0	5,114	13,805	5,643	21,182	2,289	2,185	5,138	21,208	7,828	31,434
1995	5,894	0	5,894	16,020	6,731	25,112	2,797	2,744	6,422	24,711	9,475	37,428
1996	3,194	0	3,194	12,632	13,139	30,206	6,534	5,193	13,490	22,360	18,332	46,890
5 Year Ave. 1991-1995	3,647	0	3,647	8,995	3,405	13,403	1,796	1,480	3,688	14,437	4,885	20,737

[a] Harvest reported in numbers of fish sold in the round.

[b] Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of chinook salmon roe. Since 1990, efforts were made to separate chinook salmon roe from the summer chum salmon roe sold.

[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pound of roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 6 sampling program that estimated average roe weight per female by period.

[d] Information not available.

[e] Does not include 1,233 female summer chum salmon sold with roe extracted and roe sold separately. Females are accounted for in the roe expansion.

Appendix C.14. Commercial fall chum salmon sales and estimated harvest by statistical area, District 4, Upper Yukon Area, 1974 - 1996.

Year	334-41			334-42			334-43			Total		
	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]
1974	0 [d]	0	0 [d]	9,213 [d]	0	9,213 [d]	-	-	-	9,213	0	9,213
1975		0			0		-	-	-	13,666	0	13,666
1976	462 [d]	0	462 [d]	1,280 [d]	0	1,280 [d]	-	-	-	1,742	0	1,742
1977 [e]		0			0		-	-	-	13,980	0	13,980
1978	-	-	-	[d]	1,721	[d]	-	-	-	10,988	1,721	12,709
1979 [f]	-	-	-	[d]	3,199	[d]	[d]	0	[d]	48,899	3,199	52,098
1980	-	-	-	[d]	1,789	[d]	[d]	2,558	[d]	27,978	4,347	32,325
1981	-	-	-	[d]	1,311	[d]	[d]	0	[d]	12,082	1,311	13,393
1982	-	-	-	958	20	978	2,936	147	3,083	3,894	167	4,061
1983	-	-	-	3,681	1,591	5,272	801	372	1,173	4,482	1,963	6,445
1984	-	-	-	2,961	1,222	4,183	4,664	993	5,657	7,625	2,215	9,840
1985	-	-	-	14,468	891	15,359	9,984	1,634	11,618	24,452	2,525	26,977
1986	-	-	-	2,045	0	2,045	0	0	0	2,045	0	2,045
1987	-	-	-	0	0	0	0	0	0	0	0	0
1988	-	-	-	10,157	703	10,860	5,505	718	6,223	15,662	1,421	17,083
1989	-	-	-	9,819	2,023	11,842	1,957	1,384	3,341	11,776	3,407	15,183
1990	-	-	-	3,406	1,680	5,676	1,583	671	2,490	4,989	2,351	8,166
1991	-	-	-	2,998	490	3,718	739	1,126	2,373	3,737	1,616	6,091
1992	-	-	-	0	0	0	0	0	0	0	0	0
1993	-	-	-	0	0	0	0	0	0	0	0	0
1994	-	-	-	0	0	0	0	0	0	0	0	0
1995	-	-	-	2,924	225	3,249	0	3,901	5,482	2,924	4,126	8,731
1996	-	-	-	2,918	0	2,918	0	0	0	2,918	0	2,918
5 Year Ave. 1991-1995	-	-	-	1,184	143	1,393	148	1,005	1,571	1,332	1,148	2,964

[a] Harvest reported in numbers of fish sold in the round.

[b] Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of coho salmon roe. Since 1990, efforts were made to separate coho salmon roe from the fall chum salmon roe sold.

[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pound of roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 4 sampling program that estimated average roe weight per female by period, by statistical area and gear type.

[d] Information not available.

[e] In 1977, was the last year Subdistrict 4-A (Statistical Area 334-41), by regulation, was allowed a late season.

[f] In 1979, Statistical Area 334-42 was subdivided into Statistical Areas 334-42 and 334-43.

Appendix C.15. Commercial fall chum salmon sales and estimated harvest by statistical area, Subdistricts 5-A, 5-B and 5-C, Upper Yukon area, 1974-1996.

Year	334-51			334-52			334-53			Unapportioned	Total		
	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]	Number [a,f]	Number [a]	Roe [b]	Estimated [c]
1974	23,551 [d]	0	23,551 [d]	0 [d]	0	0 [d]	-	-	-	0	23,551	0	23,551
1975	[d]	0	[d]	[d]	0	[d]	-	-	-	27,212	27,212	0	27,212
1976	5,319 [d]	0	5,319 [d]	68 [d]	0	68 [d]	-	-	-	0	5,387	0	5,387
1977	[d]	0	[d]	[d]	0	[d]	-	-	-	25,730	25,730	0	25,730
1978	[d]	3,946	[d]	[d]	1,274	[d]	-	-	-	21,016	21,016	5,220	26,236
1979	[d]	8,097	[d]	[d]	0	[d]	-	-	-	47,459	47,459	8,097	55,556
1980	[d]	605	[d]	[d]	0	[d]	-	-	-	41,771	41,771	605	42,376
1981 [e]	[d]	178	[d]	[d]	6,760	[d]	[d]	17	[d]	86,620	86,620	6,955	93,575
1982	[d]	0	[d]	[d]	23	[d]	[d]	19	[d]	13,593	13,593	42	13,593
1983	3,143	0	3,143	19,771	0	19,771	17,987	0	17,987	0	40,901	0	40,901
1984	1,415	0	1,415	10,329	0	10,329	9,403	0	9,403	0	21,147	0	21,147
1985	565	0	565	9,263	0	9,263	13,332	0	13,332	0	23,160	0	23,160
1986	1,332	0	1,332	11,907	395	12,302	7,471	0	7,471	0	20,710	395	21,105
1987	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	9,684	0	9,684	4,533	0	4,533	0	14,217	0	14,217
1989	372	60	432	9,937	3,327	13,264	4,987	209	5,196	0	15,296	3,596	18,892
1990	0	0	0	5,169	945	6,243	0	0	0	0	5,169	945	6,243
1991	0	0	0	14,968	3,625	19,727	9,173	0	9,173	0	24,141	3,625	28,900
1992	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	2,513	3,159	1,785	13,091	18,397	4,014	389	4,498	0	5,799	15,993	26,054
1996	0	181	208	5,898	8,317	15,670	1,583	0	1,583	0	7,481	8,498	17,461
5 Year Ave. 1991-1995	0	503	632	3,351	3,343	7,625	2,637	78	2,734	0	5,988	3,924	10,991

[a] Harvest reported in numbers of fish sold in the round.

[b] Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of coho salmon roe. Since 1990, efforts were made to separate coho salmon roe from the fall chum salmon roe sold.

[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pound of roe per female. Since 1990,the estimated number of females that produce the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.

[d] Information not available by statistical area.

[e] In 1981, Subdistrict 5-A (Statistical Area 334-51) and Subdistrict 5-B (statistical Area 334-52) was subdivided to include two additional subdistricts, Subdistrict 5-C (Statistical Area 334-53) and Subdistrict 5-D Statistical Area (Statistical Area 334-54) and Subdistrict 5-D (Statistical Area 334-54) was further subdivided into Statistical Areas 334-54 and 334-55.

[f] Includes harvest in Subdistrict 5-D from 1978 through 1982.

Appendix C.16. Commercial fall chum salmon sales and estimated harvest by statistical area, Subdistricts 5-D, Upper Yukon Area, 1974 - 1996.

Year	334-54			334-55			Total		
	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]
1974	-	-	-	-	-	-	-	-	-
1975	-	-	-	-	-	-	-	-	-
1976	-	-	-	-	-	-	-	-	-
1977	-	-	-	-	-	-	-	-	-
1978	-	-	-	-	-	-	-	-	-
1979	-	-	-	-	-	-	-	-	-
1980	-	-	-	-	-	-	-	-	-
1981 [d]	*	0	*	-	-	-	*	0	*
1982	*	0	*	-	-	-	*	0	*
1983	3,092	0	3,092	-	-	-	3,092	0	3,092
1984	2,913	57	2,970	-	-	-	2,913	57	2,970
1985	2,178	0	2,178	-	-	-	2,178	0	2,178
1986	1,343	0	1,343	-	-	-	1,343	0	1,343
1987	0	0	0	-	-	-	0	0	0
1988	2,772	0	2,772	-	-	-	2,772	0	2,772
1989	2,919	393	3,312	-	-	-	2,919	393	3,312
1990 [f]	1,758	113	1,882	851	0	851	2,609	113	2,733
1991	1,846	0	1,846	1,368	0	1,368	3,214	0	3,214
1992	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	3,630	0	3,630	3,630	0	3,630
1995	0	0	0	3,979	2,823 [g]	3,979	3,979	2,823	3,979
1996	890	0	890	3,507	0	3,507	4,397	0	4,397
5 Year Ave. 1991-1995	369	0	369	1,795	565	1,795	2,165	565	2,165

[a] Harvest reported in numbers of fish sold in the round.

[b] Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of coho salmon roe. Since 1990, efforts were made to separate coho salmon roe from fall chum salmon roe.

[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pounds of roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.

[d] In 1981, Subdistrict 5-A (Statistical Area 334-51) and Subdistrict 5-B (Statistical Area 334-52) was subdivided to include two additional subdistricts, Subistrict 5-C (Statistical Area 334-53) and Subdistrict 5-D (Statistical Area 334-54).

[e] Information not available.

[f] In 1990, Subdistrict 5-D (Statistical Area 334-54) was subdivided into two statistical areas, (Statistical Areas 334-54 and 334-55).

[g] Estimated harvest equals fish sold in round. The roe came from fish sold in the round, therefore, not included in estimated harvest to avoid duplicate counting.

Appendix C.17. Commercial fall chum salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1974 - 1996.

Year	334-61			334-62			334-63			Total		
	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]
1974	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	26,884	0	26,884
1975	[d]	0	[d]	[d]	0	[d]	[d]	0	[d]	18,692	0	18,692
1976	[d]	0	[d]	[d]	0	[d]	[d]	0	[d]	17,948	0	17,948
1977	[d]	0	[d]	[d]	0	[d]	[d]	0	[d]	18,673	0	18,673
1978	4,704	1,826	6,530	8,036	1,680	9,716	519	181	700	13,259	3,687	16,946
1979	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	34,185	7,170	41,355
1980	[d]	0	[d]	[d]	53	[d]	[d]	15	[d]	19,452	68	19,520
1981	[d]	0	[d]	[d]	2,784	[d]	[d]	235	[d]	25,989	3,019	29,008
1982	706	0	706	4,586	596	5,182	1,528	0	1,528	6,820	596	7,416
1983	3,526	0	3,526	23,096	3,009	26,105	7,467	92	7,559	34,089	3,101	37,190
1984	5,617	0	5,617	11,809	0	11,809	3,138	56	3,194	20,564	56	20,620
1985	1,462	0	1,462	34,663	0	34,663	6,227	0	6,227	42,352	0	42,352
1986	176	0	176	1,345	182	1,527	371	0	371	1,892	182	2,074
1987	0	0	0	0	0	0	0	0	0	0	0	0
1988	4,500	0	4,500	13,617	1,035	14,652	3,727	771	4,498	21,844	1,806	23,650
1989	14,870	173	15,043	25,650	7,050	32,700	8,570	130	8,700	49,090	7,353	56,443
1990	9,254	0	9,254	28,932	6,617	35,776	4,996 [e]	918	5,945	43,182 [e]	7,535	50,975
1991	3,278	0	3,278	21,834	12,253	35,904	3,083	1,901	5,266	28,195	14,154	44,448
1992	0	0	0	13,713	1,816	15,852	2,008	990	3,170	15,721	2,806	19,022
1993	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	3,239	4,319	1	37	50	1	3,276	4,369
1995	6,170	0	6,170	60,466	8,164	65,051	1,219	1,396	2,896	67,855	9,560	74,117
1996	663	236	934	8,491	4,906	14,332	1,112	1,031	2,308	10,266	6,173	17,574
5 Year Ave. 1991-1995	1,890	0	1,890	19,203	5,094	24,225	1,262	865	2,276	22,354	5,959	28,391

[a] Harvest reported in numbers of fish sold in the round.

[b] Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of coho salmon roe. Since 1990, efforts were made to separate coho salmon roe from the fall chum salmon roe sold.

[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pounds of roe per female. Since 1990, the estimated number of females that produce the for sold is based on a District 6 sampling program that estimated average roe weight per female by period.

[d] Information not available.

[e] Does not include 884 female fall chum salmon sold with roe extracted and roe sold separately. Females are accounted for in the roe expansion.

Appendix C.18. Commercial coho salmon sales and estimated harvest by statistical area, District 4, Upper Yukon Area, 1974 - 1996.

Year	334-41			334-42			334-43			Total		
	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]
1974	0	-	0	0	-	0	-	-	-	0	-	0
1975	0	-	0	0	-	0	-	-	-	0	-	0
1976	0	-	0	0	-	0	-	-	-	0	-	0
1977 [d]	0	-	0	0	-	0	-	-	-	0	-	0
1978	-	-	-	32	-	32	-	-	-	32	-	32
1979 [e]	-	-	-	155	-	155	0	-	0	155	-	155
1980	-	-	-	[f]	-	[f]	[f]	-	[f]	30	-	30
1981	-	-	-	0	-	0	0	-	0	0	-	0
1982	-	-	-	0	-	0	15	-	15	15	-	15
1983	-	-	-	0	-	0	0	-	0	0	-	0
1984	-	-	-	412	-	412	683	-	683	1,095	-	1,095
1985	-	-	-	153	-	153	785	-	785	938	-	938
1986	-	-	-	0	-	0	0	-	0	0	-	0
1987	-	-	-	0	-	0	0	-	0	0	-	0
1988	-	-	-	2	-	2	0	-	0	2	-	2
1989	-	-	-	0	-	0	3	-	3	3	-	3
1990	-	-	-	0	0	0	0	0	0	0	0	0
1991	-	-	-	11	0	11	3	0	3	14	0	14
1992	-	-	-	0	0	0	0	0	0	0	0	0
1993	-	-	-	0	0	0	0	0	0	0	0	0
1994	-	-	-	0	0	0	0	0	0	0	0	0
1995	-	-	-	0	0	0	0	0	0	0	0	0
1996	-	-	-	161	0	161	0	0	0	161	0	161
5 Year Ave. 1991-1995	-	-	-	2	0	2	1	0	1	3	0	3

[a] Harvest reports in numbers of fish sold in the round.

[b] Pounds of salmon roe sold. Since 1990, efforts were made to separate coho salmon roe from the fall chum salmon roe sold.

[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pounds of roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 4 sampling program that estimated average roe weight per female by period.

[d] 1977 was the last year Subdistrict 4-A (Statistical Area 334-41), by regulation, was allowed a late season.

[e] In 1979, Statistical Area 334-42 was subdivided into Statistical Areas 334-42 and 334-43.

Appendix C.19. Commercial coho salmon sales and estimated harvest by statistical area, District 5-A, 5-B, and 5-C, Upper Yukon Area, 1974 - 1996.

Year	334-51			334-52			334-53			Total		
	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]
1974	[d]	-	[d]	[d]	-	[d]	[d]	-	[d]	1,409	-	1,409
1975	5	-	5	0	-	0	-	-	-	5	-	5
1976	0	-	0	0	-	0	-	-	-	0	-	0
1977	2	-	2	0	-	0	-	-	-	2	-	2
1978	1	-	1	0	-	0	-	-	-	1	-	1
1979	0	-	0	0	-	0	-	-	-	0	-	0
1980	0	-	0	0	-	0	-	-	-	0	-	0
1981 [e]	0	-	0	0	-	0	0	-	0	0	-	0
1982	0	-	0	0	-	0	0	-	0	0	-	0
1983	0	-	0	0	-	0	0	-	0	0	-	0
1984	0	-	0	0	-	0	0	-	0	0	-	0
1985	0	-	0	0	-	0	0	-	0	0	-	0
1986	0	-	0	0	-	0	0	-	0	0	-	0
1987	0	-	0	0	-	0	0	-	0	0	-	0
1988	0	-	0	0	-	0	0	-	0	0	-	0
1989	0	-	0	0	-	0	84	-	84	84	-	84
1990	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0
5 Year Ave. 1991-1995	0	0	0	0	0	0	0	0	0	0	0	0

[a] Harvest reported in numbers of fish sold in the round.

[b] Pounds of salmon roe sold. Since 1990, efforts were made to separate coho salmon roe from the fall chum salmon roe sold.

[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pounds of roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.

[d] Information not available.

[e] In 1981, Subdistrict 5-A (Statistical Area 334-51) and Subdistrict 5-B (Statistical Area 334-52) were subdivided to include two additional subdistricts, Subdistrict 5-C (Statistical Area 334-53) and Subdistrict 5-D (Statistical Area 334-54). In 1990, Subdistrict 5-D (Statistical Area 334-54) was further subdivided into Statistical Areas 334-54 and 334-55.

Appendix C.20. Commercial coho salmon sales and estimated harvest by statistical area, District 5-D, Upper Yukon Area, 1974 - 1996.

Year	334-54			334-55			Total		
	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]
1974	-	-	-	-	-	-	-	-	-
1975	-	-	-	-	-	-	-	-	-
1976	-	-	-	-	-	-	-	-	-
1977	-	-	-	-	-	-	-	-	-
1978	-	-	-	-	-	-	-	-	-
1979	-	-	-	-	-	-	-	-	-
1980	-	-	-	-	-	-	-	-	-
1981 [d]	0	-	0	-	-	-	0	-	0
1982	0	-	0	-	-	-	0	-	0
1983	0	-	0	-	-	-	0	-	0
1984	0	-	0	-	-	-	0	-	0
1985	0	-	0	-	-	-	0	-	0
1986	0	-	0	-	-	-	0	-	0
1987	0	-	0	-	-	-	0	-	0
1988	8	-	8	-	-	-	8	-	8
1989	0	-	0	-	-	-	0	-	0
1990 [e]	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0			
5 Year Ave. 1991-1995	0	0	0	0	0	0	0	0	0

[a] Harvest reports in numbers of fish sold in the round.

[b] Pounds of salmon roe sold. Since 1990, efforts were made to separate coho salmon roe from the fall chum salmon roe sold.

[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pound of roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.

[d] In 1981, Subdistrict 5-A (Statistical Area 334-51) and Subdistrict 5-B (Statistical Area 334-52) was subdivided to include two additional subdistricts, Subistrict 5-C (Statistical Area 334-52) was subdivided to include two additional subdistricts, Subdistrict 5-C (Statistical Area 334-53) and Subdistrict 5-D (Statistical Area 334-54).

[e] In 1990, Subdistrict 5-D (Statistical Area 334-54) was subdivided into two statistical areas, (Statistical Areas 334-54 and 334-55).

Appendix C.21. Commercial coho salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1974 - 1996.

Year	334-61			334-62			334-63			Total		
	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]	Number [a]	Roe [b]	Estimated [c]
1974	[d]	-	[d]	[d]	-	[d]	[d]	-	[d]	1,479	-	1,479
1975	0 [d]	-	0 [d]	0 [d]	-	0 [d]	53 [d]	-	53 [d]	53	-	53
1976		-			-			-		1,103	-	1,103
1977	252	-	252	766	-	766	266	-	266	1,284	-	1,284
1978	521	-	521	2,450	-	2,450	95	-	95	3,066	-	3,066
1979	465	-	465	2,059	-	2,059	267	-	267	2,791	-	2,791
1980	423	-	423	632	-	632	171	-	171	1,226	-	1,226
1981	535	-	535	1,335	-	1,335	414	-	414	2,284	-	2,284
1982	1,004	-	1,004	6,449	-	6,449	327	-	327	7,780	-	7,780
1983	745	-	745	5,048	-	5,048	375	-	375	6,168	-	6,168
1984	1,606	-	1,606	5,360	-	5,360	720	-	720	7,688	-	7,688
1985	432	-	432	9,628	-	9,628	1,702	-	1,702	11,762	-	11,762
1986	30	-	30	370	-	370	41	-	41	441	-	441
1987	0	-	0	0	-	0	0	-	0	0	-	0
1988	1,240	-	1,240	10,372	-	10,372	2,360	-	2,360	13,972	-	13,972
1989	2,818	-	2,818	10,181	-	10,181	3,085	-	3,085	16,084	-	16,084
1990	3,173	0	3,173	7,096	3,559	9,951	1,280 [e]	483	1,680	11,549	4,042	14,804
1991	0	0	0	4,572	3,737	7,620	1,696	562	2,154	6,268	4,299	9,774
1992	0	0	0	5,731	1,267	6,800	825	413	1,179	6,556	1,680	7,979
1993	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	5,398	4,184	120	190	267	120	5,588	4,451
1995	1,475	0	1,475	4,209	2,072	5,156	142	157	269	5,826	2,229	6,900
1996	182	0	182	3,403	4,571	6,557	218	258	403	3,803	4,829	7,142
5 Year Ave. 1991-1995	295	0	295	2,902	2,495	4,752	557	264	774	3,754	2,759	5,821

[a] Harvest reports in numbers of fish sold in the round.

[b] Pounds of salmon roe sold. Since 1990, efforts were made to separate coho salmon roe from the fall chum salmon roe sold.

[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to1990, the roe expansion assumed 1.0 pound of roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 6 sampling program that estimated average roe weight per female by period.

[d] Information not available.

[e] Does not include 438 female coho salmon sold with roe extracted and roe sold separately. Females are accounted for in the roe expansion calculation.

Appendix C.22. Value of commercial salmon fishery to Upper Yukon Area fishermen, 1977-1996.

	Chinook			Summer Chum			Fall Chum			Coho			
Year	$/lb	$/lb Roe	Value	$/lb	$/lb Roe	Value	$/lb	$/lb Roe	Value	$/lb	$/lb Roe	Value	Total Value
1977	1.37		148,766	0.27	2.66	306,481	0.22		102,170	0.27		2,251	559,668
1978	0.87		66,472	0.24	N/A	655,738	0.25		103,091	0.24		6,105	831,406
1979	1.00		124,230	0.25	3.00	444,924	0.29		347,814	0.25		6,599	923,567
1980	0.85		113,662	0.23	2.50	627,249	0.27		198,088	0.29		2,374	941,373
1981	1.00		206,380	0.20	3.00	699,876	0.35		356,805	0.35		4,568	1,267,629
1982	1.02		162,699	0.18	2.75	452,837	0.28		53,258	0.37		18,786	687,580
1983	1.08		105,584	0.16	1.66	281,883	0.19		128,950	0.31		11,472	527,889
1984	0.95		102,354	0.23	1.78	382,776	0.26		103,417	0.24		12,823	601,370
1985	0.86		82,644	0.23	1.94	593,801	0.25		178,125	0.33		26,797	881,367
1986	0.89		73,363	0.22	2.08	634,091	0.14		30,309	0.21		556	738,319
1987	0.79		136,196	0.19	2.22	323,611	-		0	-		0	459,807
1988	1.04		142,284	0.23	4.33	1,213,991	0.32		151,300	0.37		34,116	1,541,691
1989	0.84		108,178	0.24	4.41	1,377,117	0.28		223,996	0.35		33,959	1,743,250
1990	0.72		105,295	0.11	4.41	506,611	0.34		174,965	0.34		37,026	823,897
1991	0.70	2.92	97,140	0.18	4.21	627,177	0.23	3.56	157,831	0.30	2.50	21,556	903,704
1992	0.91	2.82	168,999	0.30	4.53	525,204	0.39	4.50	54,161	0.39	2.18	19,529	767,893
1993	1.06	5.52	113,217	0.35	8.53	203,762	-	-	0	-	-	0	316,979
1994	0.92	3.11	124,270	0.20	3.77	396,685	0.16	1.50	8,517	0.48	1.50	8,739	538,211
1995	0.77	2.64	87,059	0.13	3.57	1,060,322	0.13	2.96	167,571	0.14	2.51	11,292	1,326,244
1996	0.95	2.57	47,282	0.07	3.05	966,277	0.13	1.71	45,438	0.09	2.16	13,020	1,072,017
5 Year Ave. 1991-1995	0.87	3.40	118,137	0.23	4.92	562,630	0.23 a	3.13 a	77,616	0.33 a	2.17 a	12,223	770,606

a Four year average for the years of 1991, 1992, 1994, and 1995.

Appendix C.23. Summary of test fish wheel projects conducted in the Upper Yukon Area, 1996. a

TEST FISH WHEEL PROJECTS	CONTRACTOR/ Operator	River Mile b	Start Date	End Date	Total Days of Operation	Estimated Total Salmon Captured c				Historical Data / Comments
						Chinook	Summer Chum	Fall Chum	Coho	
YUKON RIVER										
Tanana Village Test Fish Wheels	BSFA/									
-North Bank	L. Ehert	695	31-Jul	15-Sep	47	—	—	15,730	28	Fourth year of project.
-South Bank	B. Flitts / T. Hyslop	690	13-Aug	30-Sep	49	—	—	12,233	1,809	Fourth year of project. Also operated as Tolstoi River fall chum salmon CWT recovery fish wheel in 1996.
Fort Yukon Test Fish Wheels	CATG/									
-North Bank	J. Duyck / M. Solomon	1,000	8-Aug	23-Sep	47	—	—	372	0	Second year of the downstream fish wheel project
-South Bank	C. Fields / M. Solomon	1,004	21-Aug	27-Sep	38	—	—	662	0	Second year of the upstream fish wheel project.
Yukon River (Rapids) Tag Deployment Fish Wheels	USFWS/									
-North Bank	S. Zuray	731	1-Aug	19-Sep	51	—	—	7,901 d	5 d	First year of the project.
-South Bank	S. Zuray	731	1-Aug	19-Sep	51	—	—	11,249 d	1 d	First year of the project.
Yukon River (Rampart) Tag Recovery Fish Wheels	USFWS/									
-North Bank	P. Evans	783	1-Aug	24-Sep	56	—	—	32,066	0	First year of the project.
-South Bank	P. Evans	783	1-Aug	24-Sep	56	—	—	13,215	0	First year of the project.
TANANA RIVER										
Lower Tanana Tag Deployment Fish Wheel	ADF&G/									
-North Bank	C. Boulding	793	15-Aug	30-Sep	47	—	—	6,816	396	Second year of operation as the fall chum salmon tag deployment fish wheel (1995 and 1996).
Nenana Test and Recovery Fish Wheels	ADF&G/									
-North Bank (Test / Recovery)	P. Duyck, Jr. / M. Turner	859	3-Jul	2-Oct	92	428	7,464 f	3,813 g	1,628	Ninth year of project. Also operated as a fall chum salmon tag recovery fish wheel (1995 and 1996).
	BSFA/									
-South Bank (Recovery)	M. Turner	860	16-Aug	2-Oct	48	—	—	3,442	1,569	Second year of operation as the fall chum salmon tag recovery fish wheel (1995 and 1996).

a Seven fish wheels were operated by the Alaska Department of Fish and Game (ADF&G), BFSA (Bering Sea Fishermen Association), or CATG (Council of Athabascan Tribal Governments).
Four fish wheels (two tagging and two recovery fish wheels) were operated by the United States Fish and Wildlife Service (USFWS).

b Estimated river miles from the mouth of the Yukon River.

c Unless otherwise noted, fish wheel catch are adjusted to estimate total catch (i.e., less than or greater than 24 hour catches adjusted to reflect a 24 hour catch).

d Actual fall chum and coho salmon catch totals (not adjusted for hours not operated).

f Estimated summer chum salmon totals include all chum salmon caught prior to August 16.

g Estimated fall chum salmon totals include all chum salmon caught after August 15.

APPENDIX D

YUKON RIVER SALMON SUBSISTENCE AND PERSONAL USE

Appendix D.1. Estimated Yukon River chinook salmon subsistence harvest in numbers of fish by village, 1983-1996. a

Village	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1986-90 Avg	1991-95 Avg
Sheldon Pt.	1,021	802	143	592	1,173	302	165	756	445	388	561	606	459	450	598	492
Alakanuk	1,582	1,028	517	1,027	1,180	738	820	871	1,044	623	2,562	1,045	1,191	662	927	1,293
Emmonak	2,436	2,099	1,382	1,754	2,518	1,786	1,598	1,873	1,311	2,336	4,372	2,384	1,711	702	1,906	2,423
Kotlik	1,224	695	1,029	1,902	2,407	1,112	1,982	3,119	3,125	1,794	2,913	2,505	2,599	1,832	2,104	2,587
Retained From Commercial											15	114				
Mouth to Anuk River Subtotal	6,263	4,624	3,071	5,275	7,278	3,938	4,565	6,619	5,925	5,141	10,423	6,654	5,960	3,646	5,535	6,795
Mt. Village	1,875	1,217	672	1,367	2,252	740	2,001	1,792	1,171	1,249	3,217	1,511	1,542	1,315	1,630	1,738
Pitkas Pt./St. Marys	2,432	2,663	778	1,717	2,457	1,378	2,184	2,476	2,488	2,604	3,043	3,191	2,590	2,528	2,042	2,783
Pilot Station	2,703	1,116	896	1,452	2,593	674	1,498	3,786	2,681	1,818	2,661	1,977	1,614	1,611	2,001	2,150
Marshall	2,055	2,176	1,122	1,947	2,564	1,031	1,464	1,492	1,277	1,403	2,592	2,277	3,291	2,126	1,700	2,168
Retained From Commercial											3	78				
Anuk River to Owl Slough Subtotal	9,065	7,172	3,468	6,483	9,866	3,823	7,147	9,546	7,617	7,074	11,516	9,034	9,037	7,780	7,373	8,839
Russian Mission	2,634	1,938	974	1,747	2,036	1,850	2,367	1,694	1,349	1,282	3,273	1,793	2,450	2,709	1,939	2,029
Holy Cross	2,276	2,456	2,368	2,505	2,625	2,593	2,379	2,337	1,649	3,491	3,191	4,040	2,808	3,953	2,488	3,036
Shageluk-Innoko River				53	47	104	32	62	189	218	128	291	161	121	60	197
Retained From Commercial											10	25				
Owl Slough to Bonasila R. Subtotal	4,910	4,394	3,342	4,305	4,708	4,547	4,778	4,093	3,187	4,991	6,602	6,149	5,419	6,783	4,486	5,263
Lower Yukon Total	20,238	16,190	9,881	16,063	21,852	12,308	16,490	20,258	16,729	17,206	28,541	21,837	20,416	18,209	17,394	20,897
Anvik	744	576	405	959	428	211	418	481	619	389	663	424	450	768	499	509
Grayling	951	879	903	1,837	1,322	1,571	1,082	144	874	1,074	1,045	1,643	1,340	1,036	1,191	1,235
Kaltag	652	487	669	1,080	1,117	1,168	1,306	2,244	1,866	1,084	1,260	1,653	1,890	894	1,383	1,551
Nulato	1,135	966	1,063	1,835	1,573	1,986	2,079	2,788	2,500	1,596	1,660	1,735	1,533	1,461	2,052	1,805
Koyukuk	966	1,009	194	569	609	711	1,003	876	885	510	853	589	146	402	754	597
Galena	1,477	1,226	1,329	1,046	1,270	1,992	1,374	3,134	2,574	1,870	1,732	1,834	1,336	2,770	1,761	1,869
Ruby/Kokrines	2,346	1,107	1,657	1,263	927	1,402	1,016	811	971	498	3,263	1,539	1,435	557	1,084	1,541
Retained From Commercial											978	203				
Bonasila R. to Illinois Cr. Subtotal	8,271	6,250	6,220	8,589	7,246	9,031	8,278	10,478	10,289	0 7,021	11,454	9,820	8,130	7,988	8,724	9,107
Huslia	459	169	144	82	182	89	177	198	198	751	232	239	932	67	146	470
Hughes	318	856	778	296	177	29	181	90	146	29	68	107 c	77	54	155	89
Allakaket/Alatna b	706	375	283	563	309	366	438	356	451	437	139	364 c	331	84	406	344
Bettles							0	0	16	53	1	0	4	0	0	15
Koyukuk River Subtotal	1,483	1,400	1,205	941	668	484	796	644	811	1,270	460	710	1,344	205	707	918
District 4 Subtotal	9,754	7,650	7,425	9,530	7,914	9,515	9,074	11,122	11,100	8,291	11,914	10,530	9,474	8,193	9,431	10,026

-Continued-

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Village	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1986-90 Avg	1991-95 Avg
Tanana	5,547	2,682	1,248	1,672	4,021	3,537	3,008	2,284	2,483	2,477	3,362	2,999	2,398	2,741	2,904	2,744
Rampart	1,070	876	1,302	1,700	2,815	3,145	3,177	1,481	988	2,802	1,956	1,354	1,461	1,751	2,464	1,712
Fairbanks (permits) d e	2,672	2,499	1,865	1,762	613	0	200	420	982	1,394	1,514	1,920	1,447	1,166	599	1,451
Stevens Village	2,531	2,177	2,763	2,839	2,076	2,845	3,101	1,295	2,035	1,887	1,754	2,814	2,674	681	2,431	2,233
Birch Creek						0 b	0		196	44	0	119	93	0	-	80
Beaver	220	553	506	708	466	840	1,694	721	713	1,564	1,557	850	1,021	886	906	1,141
Ft. Yukon	1,887	3,608	2,900	3,083	3,950	2,245	4,898	4,051	5,585	4,122	6,361	4,727	3,132	4,957	3,645	4,785
Circle/Central (permits) e	648	545	2,259	2,233	1,614	2,034	1,785	1,951	1,871	1,752	955	1,617	1,316	1,912	1,923	1,502
Eagle (permits) e	2,183	1,998	2,247	1,915	1,988	2,333	2,385	1,742	1,193	1,040	753	1,234	1,886	1,092	2,073	1,221
Other (permits) e, f								615	374	571	437	602	1,004	377	-	598
Retained From Commercial											746	868				
Illinois Cr. to U.S. Can. Border Subtotal	16,758	14,938	15,090	15,912	17,543	17,079	20,248	14,560	16,420	17,653	19,395	19,104	16,432	15,563	16,945	17,478
Venetie	22	51		32	13	121	88	29	9	35	2,716	524	434	134	57	744
Chalkyitsik				0	0	0	0	0	0	3	0	0	0	30	0	1
Chandalar/Black Rivers Subtotal	22	51		32	13	121	88	29	9	38	2,716	524	434	164	57	744
District 5 Subtotal	16,780	14,989	15,090	15,944	17,556	17,200	20,336	14,589	16,429	17,691	22,111	19,628	16,866	15,727	17,002	18,222
Manley g	990	282	744	621	40	572	992	1169	401	551	238	480	335	134	679	401
Minto g	275	440	1,386	350	374	466	366	100	134	142	468	316	535	523	331	319
Nenana g	966	2,556	4,919	2,093	3,151	3,846	1,168	1,265	1,599	1,267	693	759	607	423	2,309	985
Fairbanks (permits) e, h	475	321	326	637	531	0	0	84	378	402	273	775	285	97	250	423
Other g, i						0	0	0	3	76	0	40	17	0	0	27
Retained From Commercial											1,037	198				
Tanana River Subtotal	2,706	3,599	7,375	3,701	4,096	4,884	2,546	2,618	2,515	2,438	2,709	2,568	1,779	1,177	3,569	2,155
Upper Yukon Total	29,240	26,238	29,890	29,175	29,566	31,599	31,956	28,329 k	30,044 k	28,420 k	36,734 k	32,726 k	28,119 k	25,097 k	30,002	30,403
Alaska Total	49,476	42,428	39,771	45,238	51,418	43,907	48,446	48,587	46,773	45,626	65,275	54,563	48,535	43,306	47,396	51,299

a 1961-1981 data available from 1981 Yukon Area Annual Management Report. Beginning in 1988 subsistence salmon harvest estimates have been generated from a stratified random sample of village households.

b Alatna combined with Allakaket.

c Due to flooding in 1994, Hughes, Allakaket and Alatna were not surveyed. The chinook harvest was estimated using the 5-year average for 1989 - 1993.

d Catches by Fairbanks subsistence permit holders that fished in District 5 near the Yukon River bridge crossing.

e Salmon catches expanded for permits not returned and household interviews (1981-1989). Beginning in 1990, reported harvest is from returned permits only.

f Other permit holders that fished in District 5 but did not reside in the villages listed.

g Permits required beginning in 1988 for Subdistricts 6-A and 6-B. In 1988 and 1989, permit and household interview data were expanded. In 1990, reported harvest is from returned permits only.

h Catches by Fairbanks subsistence permit holders that fished in the Tanana River. Permits required beginning in 1964 for the Tanana River upstream of Wood River.

i Other permit holders that fished in District 6 but did not reside in the villages listed.

k Estimated chinook salmon carcasses available for subsistence use as a by product of commercial roe sales are documented in total utilization tables.

Appendix D.2. Estimated Yukon River summer chum salmon subsistence harvest in numbers of fish by village, 1983-1996. a

Village	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1986-1990 Average	1991-1995 Average
Sheldon Pt.	1,690	2,701	1,717	4,755	2,460	2,589	4,314	1,458	2,226	1,415	2,362	1,941	2,979	2,634	3,115	2,185
Alakanuk	9,347	10,095	7,702	11,280	9,913	6,992	12,108	7,265	8,058	9,951	8,935	5,947	10,538	6,171	9,512	8,686
Emmonak	8,401	10,053	8,742	12,618	11,177	10,528	22,985	15,215	8,401	12,296	15,568	13,060	11,696	6,097	14,505	12,204
Kotlik	5,241	5,610	6,188	10,201	7,210	8,825	13,437	13,061	9,105	9,577	7,121	11,197	9,777	12,387	10,547	9,355
Retained From Commercial											299	12,608				
Mouth to Anuk River Subtotal	24,679	28,459	24,349	38,854	30,760	28,934	52,844	36,999	27,790	33,239	34,285	44,753	34,990	27,289	37,678	32,430
Mt. Village	10,183	8,665	6,745	11,468	12,456	9,248	15,869	9,950	4,743	7,864	10,505	3,938	10,554	9,285	11,798	7,521
Pitkas Pt./St. Marys	8,569	11,019	7,556	14,986	12,402	10,501	13,124	9,515	9,284	8,555	7,406	11,231	7,615	8,355	12,106	8,818
Pilot Station	4,683	3,236	3,133	7,870	4,279	4,242	6,783	6,698	4,634	6,236	5,641	5,450	4,427	6,355	5,974	5,278
Marshall	3,961	4,076	2,361	7,172	3,997	4,796	3,927	2,290	2,042	2,078	1,745	2,268	4,594	4,431	4,436	2,549
Retained From Commercial											120	5,745				1,173
Anuk River to Owl Slough Subtotal	27,396	26,996	19,795	41,496	33,134	28,787	39,703	28,453	20,703	24,731	25,417	28,852	27,190	28,426	34,315	25,339
Russian Mission	1,576	2,227	1,817	3,136	2,283	2,794	2,229	2,146	837	3,231	1,838	801	3,653	3,554	2,518	2,092
Holy Cross	3,033	5,124	1,870	2,392	1,878	3,036	1,753	857	1,028	1,001	1,517	1,479	948	1,700	1,983	1,195
Shageluk-Innoko River				6,710	8,015	8,779	8,842	6,518	3,680	5,267	4,183	6,212	7,542	6,114	7,773	5,377
Retained From Commercial											21	59				
Owl Slough to Bonasila R. Subtotal	4,609	7,351	3,687	12,238	12,176	14,609	12,824	9,521	5,545	9,599	7,559	8,551	12,143	11,368	12,274	8,663
Lower Yukon Total	56,684	62,806	47,831	92,588	76,070	72,330	105,371	74,973	54,038	67,569	67,261	81,956	74,323	67,083	84,266	66,432
Anvik	20,592	22,433	24,950	41,581	28,887	12,607	410	2,032	876	1,142	1,735	907	9	185	17,103	934
Grayling	22,958	28,060	23,937	35,284	21,264	22,634	14,570	1,430	8,094	3,605	1,137	1,418	3,385	587	19,036	3,528
Kaltag	27,674	1,800	26,965	24,667	28,550	3,592	632	6,956	2,287	1,204	1,116	3,683	139	31	12,879	1,686
Nulato	11,130	232	16,315	10,349	16,299	10,201	200	502	159	889	15	975	228	1,003	7,510	453
Koyukuk	14,440	5,215	9,666	6,250	9,718	264	381	283	2,326	1,130	230	2,039	315	41	3,383	1,208
Galena	5,789	19,480	16,212	6,618	11,776	7,413	6,216	1,760	3,493	3,232	2,477	1,198	1,954	3,902	6,757	2,471
Ruby/Kokrines	8,804	4,282	13,556	7,883	8,766	4,010	1,844	351	1,352	2,420	1,459	4,586	4,445	2,016	4,575	2,852
Retained From Commercial																
Bonasila R. to Illinois Cr. Subtotal	111,387	81,502	131,601	132,632	125,280	60,741	24,253	13,314	18,587	13,622	8,169	14,806	10,475	7,765	71,244	13,132
Huslia	18,588	12,550	13,430	10,516	11,042	14,895	10,005	7,368	7,857	13,670	8,343	6,014	4,885	2,372	10,765	8,154
Hughes	1,905	14,744	12,788	7,280	4,369	2,445	3,687	509	1,257	1,625	627	1,581 c	2448	1,411	3,658	1,548
Allakaket/Alatna b	4,165	4,169	7,564	8,934	8,700	8,524	2,915	5,319	7,413	6,858	2,703	5,042 c	6,536	4,877	6,878	5,710
Bettles							75	24	155	37	34	45	740	0	20	202
Koyukuk River Subtotal	24,658	31,463	33,782	26,730	24,111	25,864	16,682	13,220	16,682	22,190	11,907	12,682	14,609	8,660	21,321	15,614
District 4 Subtotal	136,045	112,965	165,383	159,362	149,391	86,605	40,935	26,534	35,269	35,812	20,076	27,488	25,084	16,425	92,565	28,746

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Appendix D.2. (page 2 of 2)

Village	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1986-1990 Average	1991-1995 Average
Tanana	5,552	10,620	11,148	11,646	10,876	13,972	7,756	5,905	2,779	4,553	4,245	7,022	3,660	5,190	10,031	4,452
Rampart	3,698	7,650	5,133	1,450	2,434	3,383	28	58	20	4,494	1,489	559	1,168	1,188	1,471	1,546
Fairbanks (permits) d, e	2,194	4,065	2,027	1,382	1,493	0	0	25	1,068	706	465	360	722	2,958	580	664
Stevens Village	5,051	5,952	3,046	3,116	1,446	865	2,375	1,671	1,385	460	653	459	158	530	1,895	623
Beaver	100	167	263	0	657	214	124	108	2,356	12	134	655	36	572	221	638
Ft. Yukon	7,142	3,032	4,410	3,264	1,187	7,717	1,760	145	11,974	1,700	3,830	2,043	998	26	2,815	4,109
Circle/Central (permits) e	73	0	930	459	2,078	871	361	1,267	51	356	85	106	72	324	1,007	134
Eagle (permits) e	133	49	39	516	417	1,273	547	361	607	23	32	38	57	105	623	151
Other (permits) e, f								187	32	291	24	21	232	616	37	120
Retained From Commercial											159	676				
Illinois Cr. to U.S. Can. Border Subtotal	23,943	31,535	26,996	21,833	20,588	28,295	12,951	9,727	20,271	12,595	11,116	11,939	7,103	11,509	18,679	12,438
Venetie	0	0		0	0	701	30	0	3,393	0	129	567	552	0	146	928
Chalkyitsik				0	0	327	0	90	500	17	0	0	0	0	83	103
Chandalar/Black Rivers Subtotal	0	0		0	0	1,028	30	90	3,893	17	129	567	552	0	230	1,032
District 5 Subtotal	23,943	31,535	26,996	21,833	20,588	29,323	12,981	9,817	24,164	12,612	11,245	12,506	7,655	11,509	18,908	13,469
Manley g	7,245	1,260	856	604	267	3,731	2,457	2,250	1,716	850	1,310	1,405	1,657	1,219	1,862	1,388
Minto g	7,414	5,042	5,291	1,587	1,383	947	1,425	500	748	625	367	509	1,320	1,421	1,168	714
Nenana g	6,779	13,962	15,825	10,827	21,214	5,654	3,986	1,383	1,499	6,372	5,019	1,352	5,043	4,411	8,613	3,857
Fairbanks e, h	2,276	3,177	2,646	4,024	1,461	0	0	152	1,096	1,342	97	3,693	3,528	392	1,127	1,951
Other g, i						0	0	0	10	315	0	67	113	43	0	101
Retained From Commercial											5	3,518				
Tanana River Subtotal	23,714	23,441	24,618	17,042	24,325	10,332	7,868	4,285	5,069	9,504	6,798	10,544	11,661	7,486	12,770	8,011
Upper Yukon Total j	183,702	167,941	216,997	198,237	194,304	126,260	61,784	40,636	64,502	57,928	38,119	50,538	44,400	35,420	124,244	50,226
Alaska Total	240,386	230,747	264,828	290,825	270,374	196,590	167,155	115,609	118,540	125,497	105,380	132,494	118,723	102,503	208,511	116,658

a 1961-1981 chum salmon data available from 1981 Yukon Annual Management Report. Beginning in 1988 subsistence salmon harvest estimates have been generated from a stratified random sample of village households. District 4 summer chum salmon subsistence harvest estimates prior to 1988 and Districts 5 and 6 prior to 1989 included commercially caught summer chum salmon carcasses retained for subsistence use. Beginning in 1988 and 1989, efforts were made to exclude commercial carcasses from subsistence harvest estimates.

b Alatna combined with Allakaket.

c Due to flooding in 1994, Hughes, Allakaket, and Alatna were not surveyed. The summer chum harvest was estimated using the 5-year average for 1989 - 1993.

d Catches by Fairbanks subsistence use permit holders that fished in District 5 near the Yukon River bridge crossing.

e Salmon catches expanded for permits not returned and household interviews (1981-1989). Beginning in 1990, reported harvest is from returned permits only.

f Other permit holders that fished in District 5 but did not reside in the villages listed.

g Permits required beginning in 1988 for Subdistricts 6-A and 6-B. In 1988 and 1989, permit and household interview data were expanded. Beginning in 1990, reported harvest is from returned permits only.

h Catches by Fairbanks subsistence use permit holders that fished in the Tanana River. Permits required beginning in 1964 for the Tanana River upstream of Wood River.

i Other permit holders that fished in District 6 but did not reside in the villages listed.

j Estimated summer chum salmon carcasses available for subsistence use as a by product of commercial roe sale are documented in total utilization tables.

Appendix D.3 Estimated Yukon River fall chum salmon subsistence harvest in numbers of fish by village, 1983-1996 a

Village	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1986-1990 Average	1991-1995 Average
Sheldon Pt.	233	555	713	259	882	289	586	102	84	490	158	25	256	21	424	203
Alakanuk	903	1,219	2,603	2,030	3,748	1,194	430	267	193	401	182	73	631	100	1,534	296
Emmonak	2,715	3,329	4,539	2,746	8,160	1,792	840	2,353	2,027	1,628	1,507	3,441	1,614	1,501	3,178	2,043
Kotlik	4,387	3,782	5,420	3,965	5,677	2,200	3,058	2,613	1,631	2,697	5,923	1,348	2,197	2,525	3,503	2,759
Mouth to Anuk River Subtotal	8,238	8,885	13,275	9,000	18,467	5,475	4,914	5,335	3,935	5,216	7,770	4,887	4,698	4,147	8,638	5,301
Mt. Village	4,065	3,497	3,591	2,947	4,897	1,880	4,641	1,566	1,473	1,052	1,113	797	1,347	1,366	3,186	1,156
Pitkas Pt./St. Marys	3,138	3,927	3,315	5,401	3,966	2,533	1,970	956	2,202	77	708	1,358	641	1,261	2,965	997
Pilot Station	1,302	832	1,957	1,663	583	1,372	1,872	1,941	1,062	3,528	1,017	1,527	575	448	1,486	1,541
Marshall	1,836	3,138	2,681	3,472	4,008	2,815	1,532	1,724	891	2,727	256	471	754	2,212	2,710	1,020
Anuk River to Owl Slough Subtotal	10,341	11,394	11,544	13,483	13,454	8,600	10,015	6,187	5,628	7,382	3,094	4,151	3,317	5,287	10,348	4,714
Russian Mission	773	860	1,266	637	1,255	1,151	308	878	425	648	172	11	865	587	846	424
Holy Cross	2,090	1,373	1,024	1,148	1,996	596	711	1,178	190	845	1,066	665	681	1,814	1,046	689
Shageluk-Innoko River				370	434	0	4	0	0	865	211	188	126	305	162	278
Owl Slough to Bonasila R Subtotal	2,863	2,233	2,290	2,155	3,287	1,747	1,023	2,056	615	2,358	1,449	862	1,672	2,706	2,054	1,391
Lower Yukon Total	21,442	22,512	27,109	24,638	35,208	15,822	15,952	13,578	10,178	14,956	12,313	9,900	9,687	12,140	21,040	11,407
Anvik	902	720	2,125	913	394	136	168	583	452	894	420	155	269	457	439	438
Grayling	3,847	1,950	3,106	4,204	4,750	1,760	830	1,405	3,616	2,993	2,083	811	1,155	1,759	2,590	2,132
Kaltag	2,833	1,330	1,570	2,024	7,474	2,293	1,654	2,327	2,834	2,522	704	630	644	1,049	3,154	1,467
Nulato	3,159	1,675	4,240	1,762	2,200	1,673	2,436	3,546	1,637	1,910	571	1,109	1,137	2,299	2,323	1,273
Koyukuk	1,120	1,560	798	2,195	2,492	587	2,460	860	2,761	2,817	2,052	1,049	814	2,458	1,719	1,899
Galena	4,259	7,270	4,476	4,619	10,509	4,308	6,436	3,202	5,525	2,393	3,255	3,983	3,202	6,620	5,855	3,668
Ruby/Kokrines	12,319	8,505	6,717	7,101	11,000	5,171	6,599	3,352	2,856	4,499	1,085	5,553	4,695	561	6,845	3,738
Bonasila R. to Illinois Cr. Subtotal	28,439	23,010	23,032	23,018	38,819	15,928	20,583	15,275	19,681	18,028	10,170	13,270	11,916	15,203	22,725	14,613
Huslia	3,528	6,306	276	808	585	1,697	1,728	846	411	1,286	256	55	1,035	298	1,133	609
Hughes	327	1,280	1,260	1,422	586	311	260	70	270	325	169	0 c	263	274	530	205
Allakaket/Alatna b	1,915	556	707	878	1,477	443	1,969	3,050	513	1,579	235	0 c	260	961	1,563	517
Bettles							0	0	0	14	0	0	583	50	0	119
Koyukuk River Subtotal	5,770	8,142	2,243	3,108	2,648	2,451	3,957	3,966	1,194	3,204	662	55	2,141	1,583	3,226	1,451
District 4 Subtotal	34,209	31,152	25,275	26,126	41,467	18,379	24,540	19,241	20,875	21,232	10,832	13,325	14,057	16,786	25,951	16,064

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Appendix D.3. (page 2 of 2)

Village	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1985-1989 Average	1990-1994 Average
Tanana	41,630	42,690	28,113	32,049	41,825	55,998	40,845	41,145	40,866	19,365	23,103	34,681	14,409	21,420	42,372	26,485
Rampart	5,627	4,395	19,619	3,950	5,092	3,600	2,472	10,818	5,801	5,701	3,272	1,007	1,403	896	5,186	3,437
Fairbanks (permits) d, e	12,865	12,920	13,874	11,708	5,264		7	82	2,022	2,491	930	2,870	2,184	2,727	3,412	2,099
Stevens Village	3,502	4,932	11,679	4,150	7,538	1,451	6,633	3,857	2,481	150	862	45	3,194	991	4,726	1,346
Beaver	6,004	0	1,761	3,321	5,750	96	7,242	757	7	361	692	2,069	1,231	9	3,433	872
Ft. Yukon	3,967	7,525	12,719	8,543	15,200	2,766	27,790	11,627	7,467	2,284	2,380	6,827	9,196	8,144	13,185	5,831
Circle/Central (permits) e	3,687	3,107	4,086	3,650	7,691	4,396	4,478	6,804	6,413	6,379	349	4,581	5,102	5,440	5,404	4,565
Eagle (permits) e	20,021	18,519	25,264	16,027	19,678	14,800	11,557	8,027	7,985	5,630	2,070	8,263	13,115	14,916	14,018	7,413
Other (permits) e, f								529	100	0	1,750	0	830	505	106	536
Illinois Cr. to U.S. Can. Border Subtotal	97,303	94,088	117,125	83,398	108,038	83,107	101,024	83,646	73,144	42,361	35,408	60,343	50,664	55,048	91,843	52,384
Venetie	7,800	4,345		3,193	2,774	34	7,977	5,377	758	3,066	7,881	4,302	6,065	7,195	3,871	4,418
Chalkyitsik				1,533	2,686	1,068	3,000	1,490	100	274	475	1,751	845	1,230	1,955	689
Chandalar/Black Rivers Subtotal	7,800	4,345		4,726	5,460	1,102	10,977	6,867	858	3,340	8,356	6,053	6,910	8,425	5,826	5,107
District 5 Subtotal	105,103	98,433	117,125	88,124	113,498	84,209	112,001	90,513	74,002	45,701	43,764	66,396	57,594	63,473	97,669	57,491
Manley g	11,400	2,196	6,560	5,905	4,267	6,899	21,087	25,860	13,243	7,010	3,215	13,722	20,272	10,662	12,804	11,492
Minto g	6,489	4,025	4,642	545	5,419	2,615	2,005	3,652	5,276	3,017	301	1,419	4,782	4,381	2,847	2,959
Nenana g	11,685	13,520	22,901	15,902	26,909	26,889	25,340	12,464	17,932	13,253	5,929	11,201	15,500	14,207	21,501	12,763
Fairbanks (permits) e, h	2,800	2,985	2,860	2,803	0	0	0	309	1,671	1,394	56	5,006	6,384	5,736	622	2,902
Other g, i							10,222	2,283	2,347	1,039	352	2,249	2,230	1,481	2,501	1,643
Tanana River Subtotal	32,174	22,726	36,963	25,155	36,595	36,403	58,654	44,568	40,469	25,713	9,853	33,597	49,168	36,467	40,275	31,760
Upper Yukon Total j	171,486	152,311	179,363	139,405	191,560	138,991	195,195	154,322	135,348	92,646	64,449	113,318	120,819	116,726	163,895	105,316
Alaska Total	192,928	174,823	206,472	164,043	226,768	154,813	211,147	167,900	145,524	107,602	76,762	123,218	130,506	128,866	184,934	116,722

a 1961-1981 chum salmon data available from 1981 Yukon Annual Management Report. Beginning in 1988 subsistence salmon harvest estimates have been generated from a stratified random sample of village households. Includes commercial related harvest to produce roe sold, 1982-1988.

b Alatna combined with Allakaket.

c Due to flooding in 1994, Hughes, Allakaket, and Alatna were not surveyed and the estimated harvest of fall chum salmon was zero.

d Catches by Fairbanks subsistence use permit holders that fished in District 5 near the Yukon River bridge crossing.

e Salmon catches expanded for permits not returned and household interviews (1981-1989). Beginning 1990, reported harvest is from returned permits only.

f Other permit holders that fished in District 5 but did not reside in the villages listed.

g Permits required beginning in 1988 for Subdistricts 6-A and 6-B. In 1988 and 1989, permit and household interview data were expanded. Beginning in 1990, reported harvest is from returned permits only.

h Catches by Fairbanks subsistence permit holders that fished in the Tanana River. Permits required beginning in 1964 for the Tanana River upstream of Wood River.

i Other permits holders that fished in District 6 but did not reside in the villages listed.

j Estimated fall chum salmon carcasses available for subsistence use as a by product of commercial roe sales are documented in total utilization tables.

Appendix D.4. Estimated Yukon River coho salmon subsistence harvest in numbers of fish by village, 1983-1996. a

Village	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1986-1990 Average	1991-1995 Average
Sheldon Pt.	170	245	49	237	308	169	487	78	35	441	78	52	419	138	256	205
Alakanuk	438	776	894	1,518	1,116	634	334	156	391	966	138	94	658	103	752	449
Emmonak	1,290	3,659	1,552	732	3,497	1,578	1,259	1,283	801	666	196	959	485	594	1,670	621
Kotlik	1,692	1,415	751	238	1,475	2,008	2,997	1,784	581	3,353	1,931	2,167	689	1,610	1,700	1,744
Mouth to Anuk River Subtotal	3,590	6,095	3,246	2,725	6,396	4,389	5,077	3,301	1,808	5,426	2,343	3,272	2,251	2,445	4,378	3,020
Mt. Village	2,500	982	1,527	828	2,481	1,314	2,385	1,754	868	1,971	447	968	921	276	1,752	1,035
Pitkas Pt./St. Marys	1,529	2,024	1,113	4,832	1,740	3,147	971	515	1,617	2,771	451	978	708	983	2,241	1,305
Pilot Station	638	1,114	710	1,514	300	876	379	1,968	553	300	477	811	241	1,258	1,007	476
Marshall	1,405	2,946	1,484	1,966	2,373	1,767	1,304	2,107	259	1,545	320	1,124	272	958	1,903	704
Anuk River to Owl Slough Subtotal	6,072	7,066	4,834	9,140	6,894	7,104	5,039	6,344	3,297	6,587	1,695	3,881	2,142	3,475	6,904	3,520
Russian Mission	340	740	276	879	423	604	20	688	396	1,148	152	55	891	255	483	528
Holy Cross	377	0	100	102	259	935	517	336	944	105	88	171	0	0	430	262
Shageluk-Innoko River				173	72	128	0	0	0	296	39	137	0	189	75	94
Owl Slough to Bonasila R. Subtotal	917	740	376	954	754	1,667	537	1,026	1,340	1,549	279	363	891	444	988	884
Lower Yukon Total	10,579	13,901	8,456	12,819	14,044	13,160	10,653	10,671	6,445	13,562	4,317	7,516	5,284	6,364	12,269	7,425
Anvik	250	40	272	296	405	97	40	236	347	202	115	95	10	44	215	154
Grayling	1,275	97	0	860	599	692	969	10	1,363	859	164	36	97	236	626	504
Kaltag	0	0	0	229	0	0	792	501	1,260	2,105	334	245	426	298	304	874
Nulato	0	0	510	69	85	234	276	845	75	435	37	27	25	149	302	120
Koyukuk	40	200	120	154	894	10	110	162	307	1,877	70	305	33	476	266	518
Galena	759	452	1,072	465	1,349	1,029	415	572	422	1,398	124	603	275	780	766	604
Ruby/Kokrines	1,122	1,631	1,719	339	0	2,169	1,069	974	410	1,299	308	1,957	607	376	910	916
Bonasilla R. to Illinois Cr. Subtotal	3,446	2,420	3,693	2,412	3,332	4,231	3,671	3,300	4,184	8,175	1,152	3,468	1,473	2,359	3,389	3,690
Huslia	475	12	0	31	124	201	150	235	150	233	9	47	307	18	101	149
Hughes	0	400	138	0	0	104	91	43	9	21	3	0 c	153	51	67	37
Allakaket/Alatna b	25	35	116	15	23	178	116	36	108	0	3	0 c	0	39	90	22
Bettles							0	0	0	0	0	0	1	0	0	0
Koyukuk River Subtotal	500	447	256	46	147	483	359	314	267	254	15	47	461	108	258	209
District 4 Subtotal	3,946	2,867	3,949	2,458	3,479	4,714	4,030	3,614	4,451	8,429	1,167	3,515	1,934	2,467	3,647	3,899

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Village	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1986-1990 Average	1991-1995 Average
Tanana	2,312	16,898	7,384	4,691	6,680	16,922	5,518	8,580	4,448	11,406	5,576	2,587	2,154	6,110	8,478	5,234
Rampart	47	120	513	110	81	842	87	591	58	75	38	99	0	5	342	54
Fairbanks (permits) d, e	76	254	13	709	6	0	0	5	8	34	0	25	18	42	144	17
Stevens Village	0	145	182	67	0	804	208	479	0	20	0	0	1	2	272	4
Beaver	0	0	1	124	0	164	774	172	1	398	135	10	20	7	247	113
Ft. Yukon	11	33	3	116	41	370	406	727	380	341	5	983	4	157	332	339
Circle/Central (permits) e	0	0	0	37	0	41	1	206	5	54	10	30	0	0	57	20
Eagle (permits) e	0	17	2	6	0	11	0	0	0	3	85	0	1	1	3	18
Other (permits) e, f						0	165	450	12	0	0	0	7	0	123	4
Illinois Cr. to U.S. Can. Border Subtotal	2,448	17,467	8,098	5,862	6,808	18,954	7,159	11,210	4,912	12,331	5,849	3,714	2,205	6,324	9,999	5,802
Venetie	0	0		0	17	0	2	348	12	45	135	4	0	264	73	39
Chalkyitsik				8	2	801	26	4	7	0	0	456	0	0	168	93
Chandalar/Black River Subtotal	0	0		8	19	801	28	352	19	45	135	460	0	264	242	132
District 5 Subtotal	2,448	17,467	8,098	5,870	6,827	19,755	7,187	11,562	4,931	12,376	5,984	4,174	2,205	6,588	10,240	5,934
Manley g	1,350	1,566	1,926	538	1,487	2,103	5,310	7,574	6,361	4,725	1,535	10,410	7,395	2,462	3,398	6,085
Minto g	0	800	1,144	1,058	671	2,729	1,179	818	526	614	300	2,616	338	1,223	1,291	879
Nenana g	4,352	10,270	7,614	10,090	19,592	25,369	7,593	7,381	10,171	8,895	1,314	9,387	7,142	7,883	14,005	7,362
Fairbanks (permits) e, h	1,230	2,149	1,077	1,635	0	0	0	66	2,501	2,261	0	2,103	3,076	2,314	340	1,992
Other g, i							4,759	1,774	2,002	1,039	1,155	1,973	851	1,011	1,307	1,404
Retained from commercial												2,900				
Tanana River Subtotal	6,932	14,785	11,761	13,321	21,730	30,201	18,841	17,613	21,561	17,554	4,304	29,389	18,802	14,693	20,341	17,742
Upper Yukon Total	13,326	35,119	23,808	21,649	32,036	54,670	30,056	32,769 j	30,943 j	38,359 j	11,455 j	37,078 j	22,941 j	23,948 j	34,229	27,575
Alaska Total	23,905	49,020	32,264	34,468	46,060	67,830	40,711	43,460	37,388	51,921	15,772	44,594	28,225	30,312	46,498	35,000

a 1961-1981 coho salmon data available from 1981 Yukon Annual Management Report. Beginning in 1988 subsistence salmon harvest estimates have been generated from a stratified random sample of village households.

b Alatna combined with Allakaket.

c Due to flooding in 1994, Hughes, Allakaket, and Alatna were not surveyed and the estimated harvest of coho salmon was zero.

d Catches by Fairbanks subsistence use permit holders that fished in District 5 near the Yukon River bridge crossing.

e Salmon catches expanded for permits not returned and household interviews (1981-1988). Beginning 1990, reported harvest is from returned permits only.

f Other permit holders that fished in District 5 but did not reside in the villages listed.

g Permits required beginning in 1988 for Subdistricts 6-A and 6-B. In 1988 and 1989, permits and household interview data were expanded. Beginning in 1990, reported harvest is from returned permits only.

h Catches by Fairbanks subsistence use permit holders that fished in the Tanana River. Permits required beginning in 1964 for the Tanana River upstream of Wood River.

i Other permit holders that fished in District 6 but did not reside in the villages listed.

j Estimated coho salmon carcasses available for subsistence use as a by product of commercial roe sales are documented in total utilization tables

Appendix D.5. Estimated subsistence salmon harvest in numbers of fish for Scammon Bay and Hooper Bay, 1987-1996. a

	Scammon Bay				Hooper Bay				Total			
Year	Chinook	Summer Chum	Fall Chum	Coho	Chinook	Summer Chum	Fall Chum	Coho	Chinook	Summer Chum	Fall Chum	Coho
1987	838	6,200	117	64	2,738	23,468	105	69	3,576	29,668	222	133
1988	489	8,171	551	326	1,099	23,059	1,711	1,523	1,588	31,230	2,262	1,849
1989	-	-	-	-	-	-	-	-	-	-	-	-
1990	-	-	-	-	-	-	-	-	-	-	-	-
1991	-	-	-	-	-	-	-	-	-	-	-	-
1992	948	3,795	79	31	503	12,900	127	28	1,451	16,695	206	59
1993	1,199	4,692	7	40	230	16,106	113	0	1,429	20,798	120	40
1994	668	4,347	63	80	157	10,556	284	1	825	14,903	347	81
1995	585	3,986	147	104	1,500	13,374	207	48	2,085	17,360	354	152
1996	1,238	6,365	0	0	1,127	15,870	392	92	2,365	22,235	392	92

Appendix D.6. Subsistence salmon harvest taken under authority of a permit in District 5, Upper Yukon Area, 1974-1996. a

Upper Yukon River (Hess Creek to Dall River) Subsistence Salmon Fishery b

Year	No. of Permits Issued	No. of Permits Returned	Number Reporting Catches c	Chinook	Summer Chum d	Fall Chum d	Coho
1974	29	e	e	591		1,857	1,271
1975	19	e	e	727		778	70
1976	28	e	18	531		974	e
1977	38	e	e	467		2,567	e
1978	57	e	e	1,333		9,735	e
1979	55	e	41	2,194		12,374	e
1980	70	e	67	1,350		6,488	36
1981	57	e	24	1,095		12,034	e
1982	64	e	44	1,935		11,328	20
1983	68	e	46	2,672		15,059	e
1984	67	e	54	4,676		27,869	399
1985	55	e	42	2,618		21,832	33
1986	76	e	58	3,627		18,690	759
1987 f	16	e	14	1,818	2,091	7,631	6
1988	24	21	18	1,747	2,097	3,183	606
1989	26	20	13	2,483	574	1,157	309
1990 g	26	25	16	2,033	3,493	1,109	455
1991	52	46	34	2,529	1,295	3,953	20
1992	45	42	33	2,241	975	2,491	34
1993	49	47	36	3,767	492	2,915	16
1994	50	49	36	3,073	384	2,911	25
1995	59	59	39	3,253	954	2,244	59
1996	47	45	31	1,157	3,475	2,727	42

Upper Yukon River (22 Mi Slough to U.S./Canada Border) Subsistence Salmon Fishery

Year	No. of Permits Issued	No. of Permits Returned	Number Reporting Catches c	Chinook	Summer Chum d	Fall Chum d	Coho
1979	75	e	6	4,063		30,475	114
1980	48	e	39	3,649		18,477	6
1981	71	e	51	4,510		38,333	e
1982	60	e	61	3,833		15,432	e
1983	53	e	52	2,831		23,708	e
1984	58	e	54	2,543		21,675	17
1985	59	e	36	2,419		19,059	2
1986	40	e	52	4,148		20,701	43
1987 f	51	51	58	3,602	2,495	27,369	0
1988	58	57	50	2,783	2,134	9,078	101
1989	59	56	42	1,186	68	7,515	1
1990 g	81	75	54	3,746	1,629	14,992	206
1991	70	69	48	3,219	658	14,898	5
1992	85	79	54	2,984	409	12,009	57
1993	79	79	49	1,910	118	2,419	95
1994	79	76	51	3,093	145	12,844	30
1995	87	87	53	3,628	129	19,047	1
1996	86	84	51	3,458	528	20,861	1

a Salmon harvest expanded for permits not returned (1974-1987). Beginning in 1988, reported harvest from returned permits only.

b Includes harvest from permits in Stevens Village and Rampart.

c Some fishermen reporting harvest did not have permits.

d Summer chum and fall chum salmon undifferentiated from 1974-1986.

e Information not available.

f Personal use fishery established only for fall chum salmon in 1987.

g Some fishermen may have had personal use harvest due to changes in the subsistence law. No personal use permits have been issued since 1990.

Appendix D.7. Subsistence salmon catches taken under authority of a permit in District 5, Upper Yukon Area, 1973-1996. a

Tanana River (Subdistrict 6-A) Subsistence Salmon Fishery b, c

Year	No. of Permits Issued	No. of Permits Returned	Number Reporting Catches	Chinook	Summer Chum	Fall Chum	Coho
1988	28	24	18	845	1,389	9,165	3,455
1989 d	29	28	24 e	651	1,918	25,266	5,292
1990 d	42	36	26	1,369	2,250	27,957	8,408
1991	45	41	31	420	1,716	17,472	8,486
1992	38	35	26	508	450	5,999	5,028
1993 d	42	41	22	331	784	2,617	1,317
1994	37	37	30	576	3,793	18,076	12,449
1995	41	38	29	456	4,898	23,522	11,344
1996	31	29	23	209	1,338	18,931	5,959

Tanana River (Subdistrict 6-B) Subsistence Salmon Fishery c

Year	No. of Permits Issued	No. of Permits Returned	Number Reporting Catches	Chinook	Summer Chum	Fall Chum	Coho
1988	75	66	52	3,721	3,167	18,902	18,906
1989 f	60	51	37 e	455	363	16,506	8,453
1990 f	70	58	38	1,234	1,966	16,332	9,155
1991 f	87	78	51	1,796	2,373	21,629	11,971
1992 f	98	89	57	1,587	7,820	18,782	11,409
1993	99	89	38	1,341	5,976	7,166	2,987
1994	102	94	49	1,337	2,035	13,726	12,480
1995	98	98	59	1,322	6,712	25,364	7,458
1996	105	96	59	968	6,138	17,439	8,934

Subdistrict 6-C Subsistence Salmon Fishery

Year	No. of Permits Issued	No. of Permits Returned	Number Reporting Catches	Chinook	Summer Chum	Fall Chum	Coho
1973	22	g	4	26	771	886	h
1974	70	g	g	38	1,373	1,580	h
1975	36	g	g	32	751	864	h
1976	110	g	g	31	1,314	1,512	h
1977	89	g	33	81	118	607	h
1978	160	g	126	126	2,729	1,188	h
1979	246	g	199	264	2,384	4,459	h
1980	315	g	254	282	3,729	4,059	h
1981	346	g	228	440	3,239	5,770	h
1982	330	g	209	451	2,708	4,521	h
1983	259	g	147	475	2,276	3,830	h
1984	308	g	212	321	3,177	5,134	h
1985	291	g	155	326	2,646	3,937	h
1986	323	g	211	637	4,031	4,437	h
1987 i	217	g	123	531	2,739	0	0
1988	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0
1990 j	19	18	6	15	69	279	50
1991	149	142	98	299	980	1,080	1,089
1992	149	146	90	343	1,234	896	1,116
1993 k	0	0	0	0	0	0	0
1994 m	145	142	107	457	1,198	1,600	1,545
1995 n	-	-	-	-	-	-	-

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Upper Tanana River Drainage Subsistence Salmon Fishery

Year	No. of Permits Issued	No. of Permits Returned	Number Reporting Catches	Chinook	Summer Chum	Fall Chum	Coho
1988	0	0	0	0	0	0	0
1989	2	2	2	5	0	39	0
1990	1	1	0	0	0	0	0
1991	8	7	6	0	0	288	14
1992	11	11	4	0	0	36	1
1993	10	10	8	0	0	5	0
1994	7	7	3	0	0	202	15
1995	50	46	12	0	0	88	0
1996	42	39	15	0	10	97	0

a Salmon harvest expanded for permits not returned (1973-1987). Beginning in 1988, reported harvest from returned permits only. Note, for some years, some households fished in more than one area and some were issued permits for two areas.
b Includes Kantishna River catches.
c Permit requirement for Subdistricts 6-A and 6-B went into effect in 1988; however, very few permits were issued in 1988, and not all fishermen obtained permits in 1989.
d Includes salmon given away as part of the Departments test fishing projects in Manley.
e Some fishermen reporting harvest did not have permits.
f Includes salmon given away as part of the Departments test fishing projects in Nenana.
g Information not available.
h Fall chum and coho salmon were not reported separately from 1973-1987.
i Personal use fishery established for nonrural residents beginning in July of 1987.
j Some fishermen had both personal use and subsistence permits since the McDowell Decision which became effective July 1990 stated that all Alaskan residents were eligible subsistence participants.
k Personal use fishery established for those fishing for salmon in this area.
m No personal use permits were issued in 1994 for this area.
n In 1995, subsistence regulations were repealed within the Fairbanks Nonsubsistence Area.

Appendix D.8. Personal use salmon catches taken under authority of a permit in the Lower Yukon Area, and in District 5, Upper Yukon Area, 1987-1991. a

Lower Yukon Personal Use Salmon Fishery

Year	No. of Permits Issued	No. of Permits Returned	Number Reporting Catches	Chinook	Summer Chum	Fall Chum	Coho
1987	0	0	0			0	
1988	17	14	10	67	416	5	0
1989	26	23	12	286	381	18	59
1990	19	16	15	450	256	60	8
1991 b	0	0	0	0	0	0	0

Upper Yukon River (Hess Creek to Dall River) Personal Use Salmon Fishery

Year	No. of Permits Issued	No. of Permits Returned	Number Reporting Catches c	Chinook	Summer Chum	Fall Chum	Coho
1987	42	d	33	1,674	4,262	15,750	58
1988	45	42	35	1,435	567	1,762	103
1989	45	42	32	1,877	295	3,294	82
1990 e	41	36	26	1,529	641	3,723	18
1991 b	0	0	0	0	0	0	0

Upper Yukon River (22 Mi Slough to U.S./Canada Border) Personal Use Salmon Fishery

Year	No. of Permits Issued	No. of Permits Returned	Number Reporting Catches c	Chinook	Summer Chum	Fall Chum	Coho
1987	2	2	2	32	0	0	0
1988	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0
1990	4	4	3	164	0	0	0
1991 b	0	0	0	0	0	0	0

a Personal use fishery during 1987 applied to nonrural residents harvesting only fall chum. Beginning in 1988, nonrural personal use fishing applied to all salmon species and reported harvest is from returned permits only. Effective July 1, 1990 all Alaskan residents became eligible for subsistence fishing permits.

b After 1991, regulations did not provide for a personal use fishery.

c Some fishermen reporting catches did not have permits.

d Information not available.

e Includes personal use catches of two chinook salmon taken by one permittee from a non-permit area below Rampart.

Appendix D.9. Personal use salmon catches taken under authority of a permit in the Tanana River drainage, 1987-1996. a

Subdistrict 6-A Personal Use Fishery

Year	No. of Permits Issued	No. of Permits Returned	Number Reporting Catches	Chinook	Summer Chum	Fall Chum	Coho
1987	0	0	0			0	
1988	1	1	0	0	0	0	0
1989	1	1	1	0	4	0	0
1990	1	1	0	0	0	0	0
1991	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0

Subdistrict 6-B Personal Use Fishery

Year	No. of Permits Issued	No. of Permits Returned	Number Reporting Catches	Chinook	Summer Chum	Fall Chum	Coho
1987	0	0	0			0	
1988	1	1	1	306	60	40	22
1989	1	1	1	56	220	0	0
1990	4	4	3	9	12	40	35
1991	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0

Subdistrict 6-C Personal Use Fishery

Year	No. of Permits Issued	No. of Permits Returned	Number Reporting Catches	Chinook	Summer Chum	Fall Chum	Coho
1987	132 b	c	60 d			3,316	2,465
1988	208	162	120	317	1,182	2,074	1,125
1989	175	160	112	397	991	1,770	731
1990	152	144	102	442	918	1,353	1,120
1991	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0
1993	137	135	81	426	674	163	0
1994	0	0	0	0	0	0	0
1995	139	138	91	399	780	863	417
1996	129	125	73	215	905	356	198

a Personal use fishery during 1987 applied to nonrural residents harvesting only fall chum. Beginning in 1988, nonrural personal use fishing applied to all salmon species and reported harvest is from returned permits only. Effective July 1, 1990 all Alaskan residents became eligible for subsistence fishing permits. In 1993, the Board established the Fairbanks Nonsubsistence Area, this designated fishermen residing in the area as personal use. In 1994, a Superior Court decision invalidated the Nonsubsistence Area and subsistence regulations applied. In 1995 the Board amended the Fairbanks Nonsubsistence Area to apply personal use regulations to all fishermen fishing in the area.

b Rapresents 60 former subsistence fishermen who were reissued permits to fish fall chum salmon for personal use.

c Information not available.

d Some fishing families used both subsistence and personal-use permits.

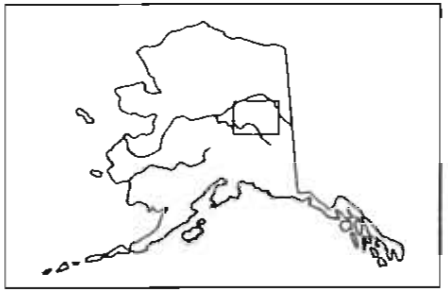
Appendix D.10. Subsistence and personal use chum salmon carcasses taken under authority of a permit,Tanana River drainage, 1973-1995.

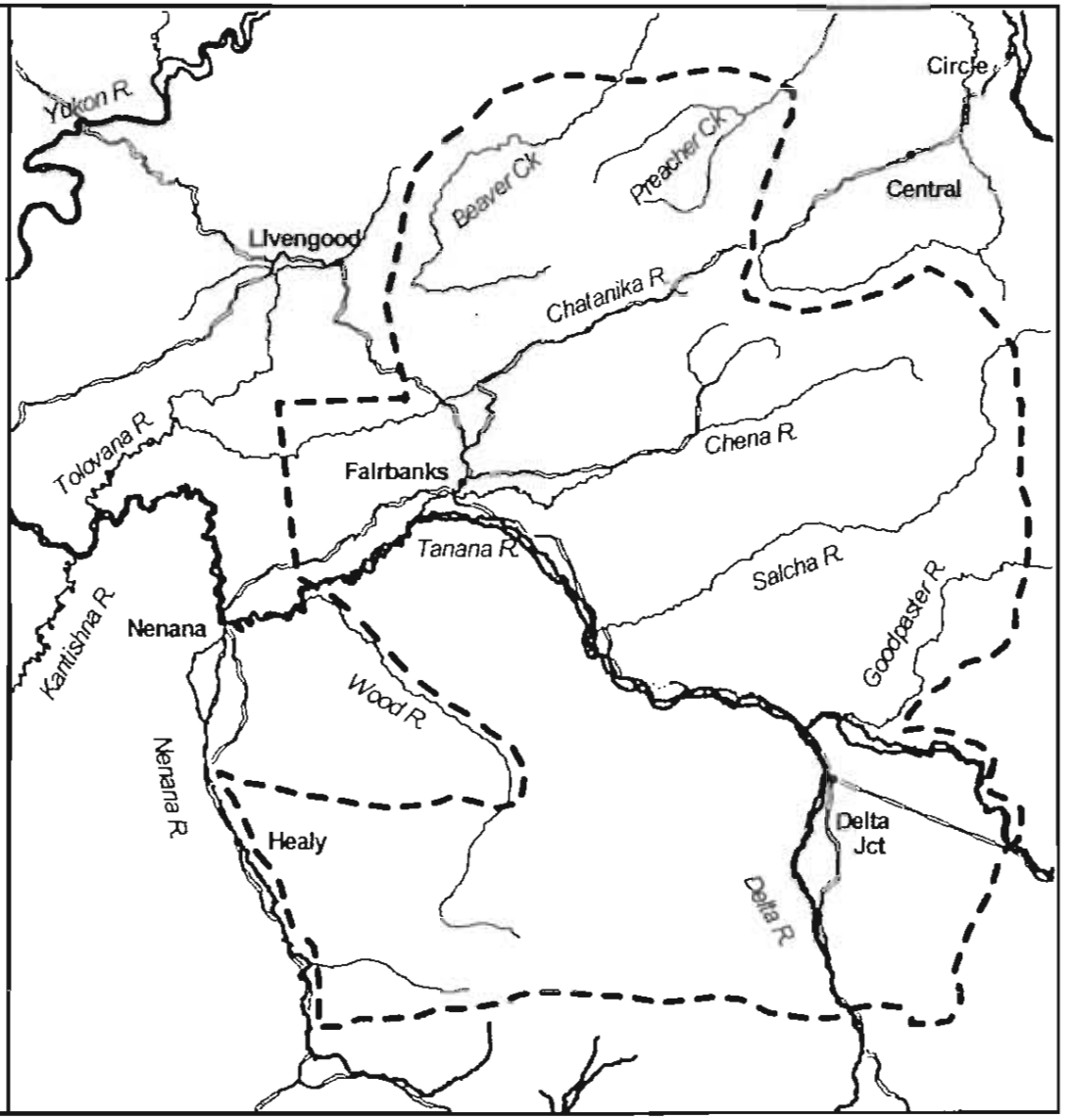
Upper Tanana River (Big Delta area)
Subsistence and Personal Use Chum Salmon Carcass Fishery

Year	No. of Permits Issued	No. of Permits Returned	Number Reporting Catches	Fall Chum Carcasses
1973	16	a	8	1,561
1974	21	a	a	1,974
1975	26	a	a	2,573
1976	36	a	a	3,441
1977	46	a	29	5,816
1978	70	a	43	2,517
1979	32	a	25	4,582
1980	57	a	36	4,915
1981	43	a	27	5,030
1982	37	a	13	1,690
1983	45	a	29	5,357
1984	31	a	14	2,353
1985	30	a	14	2,111
1986	27	a	19	2,276
1987 b	20	17	13	1,931
1988 b	22	20	15	2,100
1989 b	12	12	10	1,785
1990 b	7	7	3	750
1991	8	4	3	741
1992	10	10	9	1,897
1993 b,c	0	0	0	0
1994	4	4	4	250
1995 d				

a Information not available.
b Personal use permits 1987-1990 and 1993, all other years subsistence permits.
c The department did not issue Delta River carcass permits to reduce spawning habitat disturbances.
d In 1995 all commercial, sport, personal use, and subsistence fishing was closed in the portion of the Delta River from the mouth to a department marker two miles upstream, as adopted by the Alaska Board of Fisheries.

5 AAC 99.015 JOINT BOARD NONSUBSISTENCE AREAS. (4) The **Fairbanks Nonsubsistence Area** is comprised of the following: within Unit 20(A) as defined by 5 AAC 92.450(20)(A) east of the Wood River drainage and south of the Rex Trail but including the upper Wood River drainage south of its confluence with Chicken Creek, within Unit 20(B) as defined by 5 AAC 92.450(20)(B) the North Star Borough and that portion of the Washington Creek drainage east of the Elliot Highway, within Unit 20(D) as defined by 5 AAC 92.450(20)(D) west of the Tanana River between its confluence's with the Johnson and Delta Rivers, west of the west bank of the Johnson River, and north and west of the Volkmar drainage, including the Goodpaster River drainage, and within Unit 25(C) as defined by 5 AAC 92.450(25)(C) the Preacher and Beaver Creek drainages.





Appendix D.11. The Fairbanks Nonsubsistence Area.

APPENDIX E

YUKON RIVER SALMON ESCAPEMENT

Appendix E.1. Yukon River drainage salmon spawning escapement goals for selected species and streams, 1996.

Stream	Escapement Goals [a] Chinook	Summer Chum	Fall Chum	Coho
Andreafsky River				
East Fork	> 1,500	> 109,000		
West Fork	> 1,400	> 116,000		
Anvik River				
Aerial				
Mainstem (entire drainage)	> 1,300			
Yellow River to McDonald Creek	> 500			
Goblet Creek to McDonald Creek		> 356,000		
Sonar		> 500,000 [b]		
Nulato River				
North Fork	> 800	> 53,000		
South Fork	> 500			
Hogatza River				
Clear Creek		> 8,000		
Caribou Creek		> 9,000		
Gisasa River	> 600			
Chena River				
Mainstem from Flood Control Dam to Middle Fork	> 1,700			
Salcha River				
TAPS to Caribou Creek	> 2,500	> 3,500		
Sheenjek River			> 64,000 [c]	
Fishing Branch River (YT, Canada)			50,000-120,000 [d]	
Toklat River			> 33,000 [c]	
Delta River Index Areas			> 11,000 [c]	>9,000 [i]
Mainstem Yukon River in Y.T., Canada [b]	33,000-43,000 [f,g]		> 80,000 [g,h]	

[a] Index streams have been designated because of their importance as spawning areas and/or by their geographic location with respect to other unsurveyable salmon spawning streams in the general area. Escapement goals represent the approximate number of desired spawners considered necessary to maintain the historical yield from the stocks and are based upon historical performance, i.e., they are predicated upon some measure of historic average. Unless otherwise indicated, escapement goals are based upon aerial survey index estimates which do not represent total escapement but do reflect annual spawner abundance when using standard survey methods under acceptable survey conditions. These survey goals represent the latest review and revision by ADF&G (March 1992), unless otherwise noted.

[b] Escapement goals of total spawning abundance based upon sonar, weir, mark-and-recapture, or expansions from inseason point estimates.

[c] Escapement goals developed by ADF&G for November 1990 U.S./Canada JTC meeting.

[d] Escapement goals developed by JTC in October 1987. (see page 42 of the October 6-8, 1987 JTC report).

[f] Escapement goals developed by JTC in March 1987. Additionally, a rebuiling step escapement goal for years 1996-2001 of 28,000 chinook salmon has been agreed to by the U.S. and Canada.

[g] Estimated total spawning escapement excluding the Porcupine River (estimated mainstem Yukon River border passage minus Canadian harvests).

[h] Escapement goals developed by JTC in November 1990.

[i] Escapement goals established by ADG&G in March 1993.

Appendix E.2. Salmon spawning escapement estimates for the Yukon River drainage, 1996. [a]

Stream (drainage)	Date	Survey Rating	Chinook	Summer Chums	Fall Chums	Coho
Andreafsky River						
East Fork (weir count) [i]	6/19-7/31;8/1-9/16		2,955	108,450 [dd]		8,037
West Fork (aerial)	7/23	Fair	624	--	--	--
	Andreafsky Subtotal		3,579	108,450	0	8,037
Yukon River (Pilot Station)						
Main River (Biosonics Sonar)				Operated in a Personnel Training Mode		
Anvik River						
Mainstem						
McDonald Cr to Yellow River	7/22	Good	622	--	--	--
Yellow River to sonar site	7/22	Good	87	--	--	--
Canyon Creek	7/22	Good	9	--	--	--
Otter Creek	7/22	Good	37	--	--	--
Swift River	7/22	Good	34	--	--	--
Beaver Creek	7/22	Good	50	--	--	--
Bendix Sonar Estimate	6/18-7/17		--	933,240	--	--
	Anvik Subtotal		839	933,240	--	--
Rodo River	7/20	Fair	100	4,380	--	--
Kaltag River, counting tower [c]	6/20-7/21		140	51,269	--	--
Nulato River						
South Fork aerial (including below S. Fk)	7/20	Incomplete	(100)	(8,490)	--	--
Tower count (both forks total) [k]	6/21-7/19		756	129,694	--	--
	Nulato Subtotal		756	129,694	--	--
Total Lower Yukon River (downstream of Koyukuk River)			5,414	1,227,033	0	8,037
Koyukuk River Drainage						
Gisasa River (weir count) [r]	6/19-7/27		1,952	157,589	--	--
Hogatza River drainage						
High Creek [s]	7/12	Fair	0	789	--	--
Caribou Creek [s]	7/13	Good	0	10,470		
Wallick Creek [s]	7/13	Fair	0	0	--	--
Bear Creek [s]	7/13	Poor	0	92	--	--
Clear Creek (aerial) [s]	7/13	Good	0	(16,660)	--	--
Clear Creek (Tower) [ff]	6/21-7/19		2	100,912	--	--
Aloha Creek (aerial) [s]	7/13	Good	0	(1,023)	--	--
Klikhtentozna Creek [s]						
mainstem, below the "east" fork	7/12	Fair	0	2,230		
"eastern" fork	7/12	Fair	0	9,460	--	--
mainstem upstream of "east" fork	7/12		0	9,500	--	--
Hogatza, upper mainstem	7/12	Fair	0	102	--	--
	Hogatza Subtotal		2	133,555	--	--
Henshaw Creek	7/24	Fair	69	12,890	--	--
South Fork Koyukuk River						
Weir [t]	7/2-26;8/17-9/19		1,232	37,450	21,651	0
Aerial	7/24	Fair	(176)	1,056	--	--
Jim River	7/24	Fair	(95)	2,460	--	--
	SF Koyukuk Subtotal		1,232	40,966	21,651	0
Total Koyukuk River			3,255	345,000	21,651	0
Tozitna River	7/23	Fair	355	2,310	--	--
Melozi Hot Springs Creek	7/23	Fair	0	5,080	--	--
Total Yukon River (downstream of Tanana River)			9,024	1,579,423	21,651	8,037

Continued

Stream (drainage)	Date	Survey Rating	Chinook	Summer Chums	Fall Chums	Coho
Tanana River Drainage						
Kantishna River Drainage						
Toklat River (aerial - sonar to Toklat Springs)	10/19	Pr/too late	--	--	5,170	358 Pre, aa
Toklat River Sonar	8/14-10/1		--	--	(89,200 "total salmon")	
Barton Creek Weir	8/22-10/1		0	2	0	0 bb
Barton Creek (aerial)	7/25	Flyover	111	0	--	--
Toklat Springs						
Floodplain vic Rdhse [d]	10/15-19	Good-Fair	--	--	(~7,850)	35
Geiger Creek [b]	10/17	Good	--	--	(~2,850)	233
Sushana River [b]	10/16	Good	--	--	(~5,500)	8
Population Estimate [f]			--	--	18,284 Pre	--
	Toklat Subtotal		111	2	23,434	634
Bearpaw River (Diamond-Glacier)	7/25	Poor	107	40	--	--
Moose Creek	7/27	Brief Flyover	0	0	--	--
Moose Creek (D. Miller) [cc]	10/10		--	--	30	20
McKinley River (D. Miller) [cc]	10/10		--	--	lots of carcasses - no species given	
Birch Creek						
Hult Creek (D. Miller) [cc]	9/24		--	--	200	70
	Total Kantishna River		218	42	23,664	724
Tanana River Tagging (upstr Kantishna River) [q]	8/10-10/5		--	--	(134,810) Pre	--
Chatanika River (60 m Steese - TAPS) [g,h]	8/2-7		200	1,096	--	--
Aerial	7/26	Fair	(158)	(90)	--	--
Nenana River Drainage						
Teklanika River (spring adj Comma Lk)	10/19	Fair	--	--	0	854
Mainstem sloughs adj Tek Springs	10/19	Fair	--	--	0	95 ff
Nenana mainstem immediately upstr Teklanika R	9/26 ff		--	--	0 ff	2,171 ff
Seventeen Mile Slough	7/25;9/17-18 h,ff	Fair,Good	21	100	0 h, ff	3,668 h, ff
Lost Slough (eastern floodplain) ff	10/4		--	--	0	281
Lost Slough (western floodplain) ff	9/24,10/4	Fair-Good	--	45	0	1,759
Julius Creek						
Clear Creek (combo foot, boat, aerial) ff	10/3&4		--	--	0	2,830
Wood Creek (below weir) ff	10/4		--	--	0	82
Wood Creek (above weir) ff	10/4		--	--	0	2,099
Glacier Creek ff	10/4		--	--	0	201
Wood Creek Weir (Clear Hatchery)	9/15-21		--	--	--	(1,074) z
Walker Creek b, ff	10/2		--	--	1	0
Cottonwood Creek b, ff	10/1		--	--	0	0
June Creek b,ff	9/22,10/4		--	7 carcs [s.c?]	0	0
Lignite Spring b,ff	9/22		--	16 carcs [s.c?]	0	282
Healy Creek (Suntrana-Usibelli) b, ff	10/1-5		--	--	1	0
	Nenana Subtotal		21	145	2	14,322
McDonald Creek (flyover)	7/19	Flyover	12	--	--	--
Chena River						
Mainstem River (aerial)	7/19	Fair	(2,232)	(2,075)	--	--
MCD to Middle Fk (aerial/index area)	7/19	Fair	(2,111)	(2,062)	--	--
Counting Tower Estimate [g,j]	7/8-11,15-28	Poor	(2,277)	12,810 Pre	--	--
Mark and Recovery population Estimate [g,q]			6,833 Pre	--	--	--
	Chena Subtotal		6,833	12,810	--	--
Salcha River						
Mainstem River (aerial)	7/19	Fair	(4,866)	(10,566)	--	--
TAPS to Caribou Cr (aerial/index area)	7/19	Fair	(4,800)	(9,762)	--	--
Counting Tower Estimate [g,j]	7/8-10,15-28	Poor	(3,453) Pre	74,827 Pre	--	--
Mark and Recovery population Estimate [g,q]			7,958 Pre	--	--	--
	Salcha Subtotal		7,958	74,827	--	--

Continued

Stream (drainage)	Date	Survey Rating	Chinook	Summer Chums	Fall Chums	Coho
Richardson Clearwater River						
Extreme upper area (near Whitestone) [b, mm]	11/15		--	--	0	12
Delta River						
Foot Survey (peak count)	11/13	Good	--	--	(14,011)	19
Population Estimate [j]			--	--	19,758	--
Bluff Cabin Slough (BCS) [b, r]	11/4	Fair	--	--	3,920	1
Clearwater Lake Outlet [g]	10/22	Good	--	--	150	1,125
Clearwater Lake Inlet [g]	10/22		--	--	0	350
Delta Clearwater River [g,h]	10/22&29	Good	--	--	75	14,075
Tributaries (aerial) [g]	10/22	Good	--	--	0	3,300
Billy Creek Slough [b, mm]	10/11		--	--	(300-400)	0
Total Tanana River			15,242	88,920	47,569	33,928
Hodzana River [nn]	7/13		0	9	--	--
Beaver Creek weir [s]	7/2-8/8,18-27,9/4-25		192	654	0	0
Hadweenzic River [nn, d]	7/12,9/6		0	6	0	0
Birch Creek [nn]	7/17		1	4	--	--
Chandalar River splitbeam sonar [r]	8/8-9/21		--	--	203,683	--
Porcupine River Drainage						
Black River						
Kevinjik Creek (snorkeling) [oo]	9/8	Poor	--	--	165	0
Sheenjek River						
Bendix Sonar Estimate	7/30-9/24		--	--	247,965 [Pre]	--
Fishing Branch River						
Weir Passage [m]	8/19-10/22		4	--	77,278	12
	Total Porcupine River		4	0	325,408	12
Total Alaskan Portion of Drainage			24,463	1,669,007	521,033 [k]	41,977
Yukon Territory Streams [m]						
White River						
Kluane River	10/17	Good	--	--	14,431	--
Tincup Creek	8/22	Good	150	--	--	--
	White Subtotal		150		14,431	
Pelly River Drainage						
Ross River	8/17	Poor	102	--	--	--
Tatchun Creek [b]	8/16	Good	423	--	--	--
Little Salmon River	8/12	Good	1,150	--	--	--
Big Salmon River						
Big Salmon Lake to vicinity South Cr	8/20	Good	2,565	--	--	--
Teslin River Drainage						
Mainstem vicinity Boswell Cr	10/27	Fair	--	--	315	--
Nisutlin River						
Mainstem (Sidney Cr-100mile Cr)	8/20	Fair-Good	719	--	--	--
Wolf River (Wolf Lk-Fish Cr)	8/20	Good	705	--	--	--
	Nisutlin Subtotal		1,424	--	--	--

Continued

Appendix E.2. (page 4 of 4).

Stream (drainage)	Date	Survey Rating	Chinook	Summer Chums	Fall Chums	Coho
Whitehorse Fishway	7/20-8/31		2,958 [p]	–	–	–
Wolf Creek weir	7/20-8/31		(92) [kk]	–	–	–
Canadian Mainstem Yukon River						
Tatchun Creek to Ft Selkirk	10/18		–	–	3,812	–
Border Passage Estimate [q,v]			(47,955) [Pre]	–	(143,758) [Pre]	–
Total Yukon Territory (observed)			8,772	0	95,836 [n]	0
Total Yukon Territory (estimated from tagging) [w]			(28,349) [Pre]	–	(122,688) [Pre]	–
Yukon River Drainage Totals			33,235	1,669,007	616,869	41,977

[a] Estimates are from aerial surveys (peak count) unless otherwise indicated; carcass counts included. Data in parentheses not included in totals or subtotals. **Latest revision February 27, 1997.**
[b] Foot survey.
[c] Cooperative program with BSFA and 4-H Youth.
[d] Combination foot and aerial survey.
[f] Population estimate based upon timing of ground surveys of the Toklat Springs area and salmon streamlife data.
[g] Sport Fish Division estimate.
[h] Boat survey.
[i] Population estimate based upon expanded counting tower observations.
[k] Cooperative program with BSFA and Nulato Tribal Council.
[l] Population estimate based upon replicate foot surveys and salmon streamlife data.
[m] Canadian Department of Fisheries and Oceans (DFO) estimate.
[n] Total for Alaskan portion of drainage does not include Fishing Branch River. Total for Yukon Territory includes Fishing Branch River.
[p] First chinook was passed on July 22; last fish on August 31. A total of 77 females and 215 males were taken for hatchery brood stock. The number of adipose-clipped fish which returned to the fishway totaled 422.
[Pre] Preliminary data.
[q] Population estimate based upon mark and recapture.
[r] USFWS estimate.
[s] BLM estimate.
[v] Canadian border passage estimate for Yukon Territory streams excluding the Fishing Branch River. Canadian harvest has not been removed; these are "border" escapement estimates.
[w] Canadian estimated spawning escapement for Yukon Territory streams excluding the Fishing Branch River; from DFO tagging study (border passage estimate minus Canadian harvest).
[x] Gillnet test fishing.
[z] For coho returning to weir, sex composition was 35% females. A total of 992 coho were releasd to spawn wild.
[aa] This is a "SALMON" passage estimate.
[bb] No coho salmon were passed at the weir site through October 1.
[cc] Dennis Miller is a long-time aerial salmon survey pilot for CFMDD in Interior Alaska.
[dd] Passage of chum salmon from August 1 - September 16 was 2,978.
[ff] Estimate made by Tanana Chief Conference (TCC). An additional 105 summer chum were counted upstream of the tower site on June 19 prior to startup and 1,977 fish were counted downstream of the tower site after the project terminated.
[hh] BLM realty crew counted over a dozen chum in mouth of Mickey Creek (photos were taken). At least 4 fish observed to have orange spaghetti tags.
[jj] Weir maintained by Ross River Dena Council.
[kk] The first chinook was passed on August 9 and the last on August 26.
[mm] Habitat Division estimate.
[nn] USFWS, Division of Realty estimate.

Appendix E.3. Estimates of salmon passage on the mainstem Yukon River using 120 kHz sonar equipment at Pilot Station 1993-1996.

Year	Dates of Operation	Chinook	Summer Chum	Fall Chum	Coho [a]	Other Fish [b]
1993 [c]	6/04-8/31	135,000	947,000	292,000	42,000	351,000 [d]
1994 [c]	6/04-9/08	142,000	1,997,000	407,000	191,000	271,000 [d]
1995 [f]	6/07-9/03	240,000	3,638,000	1,247,000	155,000	620,000
1996 [g]						

[a] Passage estimates for coho salmon are incomplete. The sonar project is terminated prior to the end of the coho salmon run.

[b] Other fish may include pink salmon (which are substantially more abundant in even-numbered years), whitefish, sheefish, northern pike, and other species. These estimates are not total passage estimates but are merely expanded estimates of the number of fish in the acoustical beam.

[c] Chart recording traces of fish or debris judged to be travelling downstream, and an associated portion of traces with no discernible direction of travel, were not included in passage estimate calculations.

[d] Does not include fish passing near shore on the left (south) bank.

[f] All chart recording traces of fish were assumed to be travelling upstream, and included in passage estimate calculations.

[g] Operated only for training purposes in 1996.

Appendix E.4. Chinook salmon escapement counts for selected spawning areas in the Alaskan portion of the Yukon River drainage, 1961-1996. [a]

	Andreafsky River			Anvik River		Nulato River			Gisasa River		Chena River			Salcha River		
	East Fork		West	Aerial		Aerial		ainstem			Pop. Est.	Aerial		Pop. Est.	Aerial	
Year	Aerial	Tower or Weir Count	Fork Aerial	River [b]	Index Area [b]	North Fork [c]	South Fork	Tower Counts	Aerial	Weir	or Tower Counts	River	Index Area [d]	or Tower Counts	River	Index Area [f]
1961	1,003			1,228		376 [g]	167		266 [g]						2,878	
1962	675 [g]		762 [g]									61 [g,h]			937	
1963												137 [g]				
1964	867		705												450	
1965			344 [g]	650 [g]											408	
1966	361		303	636											800	
1967			276 [g]	336 [g]												
1968	380		383	310 [g]											739	
1969	274 [g]		231 [g]	296 [g]											461 [g]	
1970	665		574 [g]	368								6 [g]			1,882	
1971	1,904		1,682									193 [g,h]			158 [g]	
1972	798		582 [g]	1,196								138 [g,h]			1,193	1,034
1973	825		788	613								21 [g]			391	352 [j]
1974			285	471 [g]		55 [g]	23 [g]		161			1,016 [h]	959 [h]		1,857	1,620
1975	993		301	730		123	81		385			316 [h]	262 [h]		1,055	950 [j]
1976	818		843	1,053		471	177		332			531	496		1,641	1,473
1977	2,008		1,499	1,371		286	201		255			563			1,202	1,052
1978	2,487		1,062	1,324		498	422		45 [g]			1,726			3,499	3,258
1979	1,180		1,134	1,484		1,093	414		464			1,159 [g]			4,789	4,310 [j]
1980	958 [g]		1,500	1,330	1,192	954 [g]	369 [g]		951			2,541			6,757	6,126
1981	2,146 [g]		231 [g]	807 [g]	577 [g]		791					600 [g]			1,237	1,121
1982	1,274		851						421			2,079			2,534	2,346
1983				653 [g]	378 [g]	526	480		572			2,553	2,338		1,961	1,803
1984	1,573 [g]		1,993	841 [g]	574 [g]							501	494		1,031	906
1985	1,617		2,248	1,051	720	1,600	1,180		735			2,553	2,262		2,035	1,860
1986	1,954	1,530 [k]	3,158	1,116	918	1,452	1,522		1,346		9,085 [m]	2,031	1,935		3,368	3,091 [j]
1987	1,608	2,011 [k]	3,281	1,174	879	1,145	493		731		6,404 [m]	1,312	1,209	4,771	1,898	1,671
1988	1,020	1,339 [k]	1,448	1,805	1,449	1,061	714		797		3,346 [m]	1,966	1,760	4,562	2,761	2,553
1989	1,389		1,089	442 [g]	212 [g]						2,686 [m]	1,280	1,185	3,294	2,333	2,136
1990	2,503		1,545	2,347	1,595	568 [g]	430 [g,h]		684 [g]		5,603 [m]	1,436	1,402	10,728	3,744	3,429
1991	1,938		2,544	875 [g]	625 [g]	787	1,253		1,690		3,025 [m]	1,277 [g]	1,277 [g]	5,608	2,212 [g]	1,925 [g]
1992	1,030 [g]		2,002 [g]	1,536	931	348	231		910		5,230 [m]	825 [g]	799 [g]	7,862	1,484 [g]	1,436 [g]
1993	5,855		2,765	1,720	1,526	1,844	1,161		1,573		12,241 [k]	2,943	2,660	10,007 [k]	3,636	3,562
1994	300	7,801 [p,r]	213 [g]		913 [g]	843	952	1,795 [k]	2,775	2,888 [p,t]	11,877 [k]	1,570	1,570	18,399 [k]	11,823	11,189
1995	1,635	5,841	1,108	1,996	1,147	968	681	1,412	410	4,023	9,680 [m]	3,575	3,039	13,643 [k]	3,978	3,734
1996 [v]		2,955	624	839	709		100 [h]	756		1,952	6,833 [m]	2,233	2,112	7,958	4,868	4,600
E.O.	> 1,500		> 1,400	> 1,300 [k]	> 500 [k]	> 800	> 500		> 600				1,700			> 2,500

Continued

[a] Data obtained by aerial survey unless otherwise noted. Only peak counts are listed. Survey rating is fair to good unless otherwise noted. Latest table revision 31-Oct-96.

[b] From 1961-1970, river count data are from aerial surveys of various segments of the mainstem Anvik River. From 1972-1979, counting tower operated, mainstem aerial survey counts below the tower were added to tower counts. From 1980-present, aerial survey counts for the river are best available minimal estimates for the entire Anvik River drainage. Index area counts are from the mainstem Anvik River between the Yellow River and McDonald Creek.

[c] Includes mainstem counts below the confluence of the North and South Forks, unless otherwise noted.

[d] Chena River index area for assessing the escapement objective is from Moose Creek Dam to Middle Fork River.

[f] Salcha River index area for assessing the escapement objective is from the TAPS crossing to Caribou Creek.

[g] Incomplete and/or poor survey conditions resulting in minimal or inaccurate counts.

[h] Boat survey.

[j] Data unavailable for index area. Calculated from historic (1972-91) average ration of index area counts to total river counts (0.90:1.0).

[k] Tower counts.

Population estimate.

[m] Mainstem counts below the confluence of the North and South Forks Nulato River included in the South Fork counts.

[p] Weir counts.

[r] Weir installed on June 29; first full day of counts June 30.

[s] Tower counts delayed until June 29 because of high, turbid water. First full day of counts occurred on June 30.

[t] Weir installed on July 11; first full day of counts July 12.

[v] Preliminary.

Interim escapement goals. Established March, 1992.

[x] Interim escapement goal for the entire Anvik River drainage is 1,300 salmon. Interim escapement objective for mainstem Anvik River between the Yellow River and McDonald Creek is 500 salmon.

Appendix E.5. Chinook salmon escapement counts for selected spawning areas in the Canadian portion of the Yukon River drainage, 1961-19

Year	Tincup Creek [a]	Tatchum River [a,b]	Little Salmon River [a]	Big Salmon River [a,c]	Nisutlin River [a,d]	Ross River [a,f]	Wolf River [a]	Whitehorse Fishway [h]	Canada Mainstem Tagging Estimate [i]
1961								1,068	
1962								1,500	
1963								483	
1964								595	
1965								903	
1966		7 [k]						563	
1967								533	
1968			173 [k]	857 [k]	407 [k]	104 [k]		414	
1969			120	286	105			334	
1970		100		670	615		71 [k]	625	
1971		130	275	275	650		750	856	
1972		80	126	415	237		13	391	
1973		99	27 [k]	75 [k]	36 [k]			224	
1974		192		70 [k]	48 [k]			273	
1975		175		153 [k]	249		40 [k]	313	
1976		52		86 [k]	102			121	
1977		150	408	316 [k]	77			277	
1978		200	330	524	375			725	
1979		150	489 [k]	632	713		183 [k]	1,184	
1980		222	286 [k]	1,436	975		377	1,383	
1981		133	670	2,411	1,626	949	395	1,555	
1982		73	403	758	578	155	104	473	19,790
1983	100	264	101 [k]	540	701	43 [k,n]	95	905	28,989
1984	150	153	434	1,044	832	151 [k]	124	1,042	27,616 [m]
1985	210	190	255	801	409	23 [k]	110	508	10,730
1986	228	155	54 [k]	745	459 [k]	72 [n]	109	557	16,415
1987	100	159	468	891	183	180 [k]	35	327	13,260
1988	204	152	368	765	267	242	66	405	23,118
1989	88	100	862	1,662	695	433 [p]	146	549	25,201
1990	83	643	665	1,806	652	457 [k]	188	1,407	37,699
1991			326	1,040		250	201 [r]	1,266	20,743
1992	73	106	494	617	241	423	110 [r]	758	25,497
1993		183	184	572	339	400	168 [r]	668	28,558
1994	101 [k]	477	726	1,764	389	506	393 [r]	1,577 [r]	25,890
1995	121	397	781	1,314	274	253 [k]	229 [r]	2,103	31,997
1996 [s]	150	423	1,150	2,565	719	102 [k]	705 [r]	2,958	28,349
E.O.									33,000-43,000 [q]

Continued

[a] Data obtained by aerial survey unless otherwise noted. Only peak counts are listed. Survey rating is fair to good, unless otherwise noted. Latest table revisions 31-Oct-96.
[b] All foot surveys except 1978 (boat survey) and 1986 (aerial survey).
[c] For 1968, 1970, and 1971 counts are from mainstem Big Salmon River. For all other years counts are from the mainstem Big Salmon River between Big Salmon Lake and the vicinity of Souch Creek.
[d] One Hundred Mile Creek to Sidney Creek.
[f] Big Timber Creek to Lewis Lake.
[g] Wolf Lake to Red River.
[h] Includes 50, 92, 292, 506, 243, 288, 879, 757, and 422 fin-clipped hatchery-origin salmon in 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995 and 1996 respectively. Note that the 1994 count is presently under review because a number of fin-clipped fish were double counted.
[j] Estimated total spawning escapement excluding Porcupine River (estimated border escapement minus the Canandian catch).
[k] Incomplete and/or poor survey conditions resulting in minimal or inaccurate counts.
[m] Estimate derived by dividing the annual 5-area (Whitehorse Fishway, Big Salmon, Nisutlin, Wolf, Tatchun) count by the average proportion of the annual 5-area index count to the estimated spawning escapement from the DFO tagging study for years 1983, and 1985-1989.
[n] Information on area surveyed is unavailable.
[p] Counts are for Big Timber Creek to Sheldon Lake.
[q] Interim escapement objective. Stabilization escapement objective for years 1990-1995 is 18,000 salmon. Rebuilding step escapement objective for years 1996-2001 is 28,000 salmon.
[r] Counts are for Wolf Lake to Fish Lake outlet.
[s] Preliminary.
[t] Under review; a number of fin-clipped fish were double-counted.

Appendix E.6. Summer chum salmon escapement counts for selected spawning areas in the Alaskan portion of the Yukon River drainage, 1973-1996.

	Andreafsky River			Anvik River		Rodo River	Kaltag Creek	Nulato River			Gisasa River		Hogatza River		Tozitna River	Chena River		Salcha River	
	East Fork		West Fork					South Fork	North Fork [c]	ainstem			Clear & Caribou Cr.	Clear Creek					
Year	Aerial [a]	Sonar, Tower or Weir	Aerial [a]	Tower & Aerial [b]	Sonar	Aerial	Tower	Aerial	Aerial	Tower	Aerial	Weir	Aerial	Tower	Aerial	Aerial	Tower	Aerial	Tower
1973	10,149 [d]		51,835	249,015												79 [d]		290	
1974	3,215 [d]		33,578	411,133		16,137		29,016	29,334		22,022				1,823	4,349		3,510	
1975	223,485		235,954	900,967		25,335		51,215	87,280		56,904		22,355		3,512	1,679		7,573	
1976	105,347		118,420	511,475		38,258		9,230 [d]	30,771		21,342		20,744		725 [d]	885		6,484	
1977	112,722		63,120	358,771		16,118		11,385	58,275		2,204 [d]		10,734		761 [d]	610		677 [d]	
1978	127,050		57,321	307,270		17,845		12,821	41,859		9,280 [d]		5,102		2,262	1,609		5,405	
1979	66,471		43,391		260,537			1,508	35,598		10,962		14,221			1,025 [d]		3,060	
1980	36,823 [d]		114,759		492,676			3,702 [d]	11,244 [d]		10,388		19,786		580	338		4,140	
1981	81,555	147,312 [f]			1,486,182			14,348								3,500		8,500	
1982	7,501	181,352 [f]	7,267 [d]		444,581						334 [d]		4,984 [d]		874	1,509		3,756	
1983		110,808 [f]			362,912			1,263 [d]	19,749		2,356 [d]		28,141		1,604	1,097		716 [d]	
1984	95,200	70,125 [f]	238,565		891,026								184 [d]			1,861		9,810	
1985	66,146		52,750		1,080,243	24,576		10,494	19,344		13,232		22,566		1,030	1,005		3,178	
1986	83,931	167,614 [g]	99,373		1,189,602			16,848	47,417		12,114				1,778	1,509		8,028	
1987	6,687	45,221 [g]	35,535		455,876			4,094	7,163		2,123		5,869 [d]			333		3,657	
1988	43,056	68,937 [g]	45,432		1,125,449	13,872		15,132	26,951		9,284		6,890		2,983	432		2,889 [d]	
1989	21,460 [d]				636,906											714 [d]		1,574 [d]	
1990	11,519 [d]		20,426 [d]		403,627	1,941 [d]		3,196 [d]	1,419 [d]		450 [d]		2,177 [d]		38	245 [d]		450 [d]	
1991	31,886		46,657		847,772	3,977		13,150	12,491		7,003		9,947		93	115 [d]		154 [d]	
1992	11,308 [d]		37,808 [d]		775,626	4,465		5,322	12,358		9,300		2,986		794	848 [d]		3,222	
1993	10,935 [d]		9,111 [d]		517,409	7,867		5,486	7,698		1,581				970	188	5,400	212	5,809
1994		200,981 [j,k]			1,124,689		47,295			148,782	6,827	51,116 [n]	8,247 [o]			1,137	9,984	4,916	39,450
1995		172,148 [j]			1,339,418	12,849	77,193	10,875	29,949	236,690	8,458	136,886		116,735	4,985	185 [d]	3,519	934 [d]	30,784
1996 [w]		108,450 [j]			933,240	4,380	51,269	8,490 [d,h]		129,694		157,589	27,090 [o]	100,912	2,310	2,061	12,810 [p]	9,722	74,827
E.O. [r]	>109,000		>116,000		>500,000 [s]				>53,000 [t]				>17,000 [v]					>3,500	

[a] Data obtained by aerial survey unless otherwise noted. Only peak counts are listed. Latest table revision December 12, 1996.
[b] From 1972-1979 counting tower operated; escapement estimate listed is the tower counts plus expanded aerial survey counts below the tower (see Buklis 1982).
[c] Includes mainstem counts below the confluence of the North and South Forks, unless otherwise noted.
[d] Incomplete survey and/or poor survey timing or conditions resulted in minimal or inaccurate count.
[f] Sonar count.
[g] Tower count.
[h] Mainstem counts below the confluence of the North and South Fords of the Nulato River included in the South Fork counts.
[j] Weir count.
[k] Weir installed on June 29. First full day of counts occurred on June 30.
Tower counts delayed until June 29 because of high, turbid water. First full day of counts occurred on June 30.
[n] Weir installed on July 11. First full day of counts occurred on July 12.
[o] BLM helicopter survey.
[p] Tower operations were severely hamperred because of high, turbid water which prohibited observation from the tower. Tower operated during the periods July 10-15 and from July 19-30, 1995.
[r] Interim escapement objective.
[s] The Anvik River escapement objective was rounded upward to 500,000 from 487,000 in March, 1992.
[t] Interim escapement objective for North Fork Nulato River only.
[v] Consists of Clear and Caribou Creeks interim escapement objectives of 9,000 and 8,000, respectively.
[w] Preliminary.

Appendix E.7. Fall chum salmon escapement counts for selected spawning areas in Alaskan and Canadian portions of the Yukon River drainage, 1971-1996.

	Alaska				Canada					
Year	Toklat River [b]	Delta River [c]	Chandalar River [d]	Sheenjek River [d]	Fishing Branch River [f,g]	Mainstem Yukon River Index [g]	Koidern River [g]	Kluane River [g,i]	Teslin River [g]	Mainstem Tagging Estimate [m]
1971					312,800					
1972		5,384			35,125 [h]			198 [p,r]		
1973		10,469			15,989 [s]	383		2,500		
1974	41,798	5,915		89,966 [t]	32,525 [s]			400		
1975	92,265	3,734 [v]		173,371 [t]	353,282 [s]	7,671		362 [r]		
1976	52,891	6,312 [v]		26,354 [t]	36,584			20		
1977	34,897	16,876 [v]		45,544 [t]	88,400			3,555		
1978	37,001	11,136		32,449 [t]	40,800			0 [r]		
1979	158,336	8,355		91,372 [t]	119,898			4,640 [r]		
1980	26,346	5,137		28,933 [t]	55,268			3,150		
1981	15,623	23,508		74,560	57,386 [w]			25,806		
1982	3,624	4,235		31,421	15,901	1,020 [x]		5,378		31,958
1983	21,869	7,705		49,392	27,200	7,560		8,578 [r]		90,875
1984	16,758	12,411		27,130	15,150	2,800 [y]	1,300	7,200	200	56,633 [z]
1985	22,750	17,276 [v]		152,768	56,016 [s]	10,760	1,195	7,538	356	62,010
1986	17,976	6,703 [v]	59,313	84,207 [aa]	31,723 [s]	825	14	16,686	213	87,940
1987	22,117	21,180	52,416	153,267 [aa]	48,956 [s]	6,115	50	12,000		80,776
1988	13,436	18,024	33,619	45,206 [aa]	23,597 [s]	1,550	0	6,950	140	36,786
1989	30,421	21,342 [v]	69,161	99,116 [aa]	43,834 [s]	5,320	40	3,050	210 [p]	35,750
1990	34,739	8,992 [v]	78,631	77,750 [aa]	35,000 [ab]	3,651	1	4,683	739	51,755
1991	13,347	32,905 [v]		86,496 [ac]	37,733 [s]	2,426	53	11,675	468	78,461
1992	14,070	8,893 [v]		78,808 [ac]	22,517 [s]	4,438	4	3,339	450	49,082
1993	27,838	19,857		42,922 [ac]	28,707 [s]	2,620	0	4,610	555	29,743
1994	76,057	23,777 [v]		153,000 [ac,ad]	65,247 [s]	1,429 [p]	20 [p]	10,734	209 [p]	98,358
1995	54,513 [ah]	20,587	280,999	235,000 [ac]	51,971 [s,aj]	4,701	0	16,456	633	158,092
1996 [ad]	18,264	19,758	203,683	247,965 [ac]	77,278 [s]	4,977	0	14,431	315	122,688
E.O. [ef]	>33,000	>11,000	>64,000	50,000-120,000						>80,000

Continued

[a] Latest table revision November 6, 1996.
[b] Expanded total abundance estimates for upper Toklat River index area using stream life curve (SLC) developed with 1987-1993 data. Index area includes Geiger Creek, Sushana River, and mainstem floodplain sloughs from approximately 0.25 mile upstream of roadhouse to approximately 1.25 miles downstream of roadhouse.
[c] Estimates are a total spawner abundance, generally from using spawner abudance curves and streamlife data.
[d] Side-scan sonar estimate 1986-1990, split beam sonar estimate 1995-1996.
[f] Located within the Canadian portion of the Porcupine River drainage. Total escapement estimated using weir to aerial survey expansion factor of 2.72, unless otherwise indicated.
[g] Aerial survey count unless otherwise indicated.
[h] Tatchun Creek to Fort Selkirk.
[j] Duke River to end of spawning sloughs below Swede Johnston Creek.
[k] Boswell Creek area (5 km below to 5 km above confluence).
[m] Excludes Fishing Branch River escapement (estimated border passage minus Canadian removal).
[n] Weir installed on September 22. Estimate consists of a weir count of 17,190 after September 22, and a tagging passage estimate of 17,935 prior to weir installation.
[p] Incomplete and/or poor survey conditions resulting in minimal or inaccurate counts.
[r] Foot survey.
[s] Weir count.
[t] Total escapement estimate using sonar to aerial survey expansion factor of 2.22.
[v] Population estimate from replicate foot surveys and stream life data.
[w] Initial aerial survey count was doubled before applying the weir/aerial expansion factor of 2.72 since only half of the spawning area was surveyed.
[x] Boat survey.
[y] Total index area not surveyed. Survey included the mainstem Yukon River between Yukon Crossing to 30 km below Fort Selkirk.
[z] Escapement estimate based on mark-recapture program unavailable. Estimate based on assumed average exploitation rate.
[a] Expanded estimates for period approximateing second week August through middle fourth week September, using Chandalar River run timing data.
[a] Weir was not operated. Although only 7,541 chum salmon were counted on a single survey flown October 26, a population estimate of approximately 27,000 fish was made through date of survey, based upon historic average aerial-to-weir expansion of 28%. Actual population of spawners was reported by DFO as between 30,000-40,000 fish considering aerial survey timing.
[a] Total abundance estimate are for the period approximateing second week August through middle fourth week of September. Comparative escapement estimates prior to 1986 are considered more conservative; approximating the period of end of August through middle week of September.
[a] Preliminary.
[af] Interim escapement objective.
[a] Based on escapement estimates for years 1974-1990.
[a] Minimal estimate because of late timing of ground surveys with repect to peak of spawning.
[aj] Minimal count because weir was submerged, but closed, during the period 31 August - 8 September because of high water.

Appendix E.8. Yukon River fall chum salmon estimated brood year production and return per spawner estimates.

Year	(P) Estimated Annual Totals			Estimated Brood Year Return: Number of Salmon a				Percent				(R)	(R/P)
	Escapement b	Catch	Return	Age 3	Age 4	Age 5	Age 6	Age 3	Age 4	Age 5	Age 6	Total Brood Year Return a	Return/ Spawner
1974	340,408	395,198	735,606	69,059	384,993	67,468	0	0.132	0.738	0.129	0.000	521,520	1.53
1975	1,245,304	382,200	1,627,504	116,367	1,203,589	58,797	0	0.084	0.873	0.043	0.000	1,378,754	1.11
1976	244,282	233,917	478,199	100,242	562,568	113,155	3,820	0.129	0.721	0.145	0.005	779,785	3.19
1977	371,414	353,236	724,650	98,307	887,805	153,523	3,539	0.086	0.777	0.134	0.003	1,143,175	3.08
1978	242,772	340,816	583,588	18,349	290,316	76,537	0	0.048	0.754	0.199	0.000	385,202	1.59
1979	755,922	615,377	1,371,299	35,927	650,193	223,198	3,343	0.039	0.712	0.245	0.004	912,662	1.21
1980	231,368	488,305	719,673	7,079	294,711	179,420	2,037	0.015	0.610	0.371	0.004	483,247	2.09
1981	342,154	677,257	1,019,411	37,311	820,612	240,238	8,615	0.034	0.741	0.217	0.008	1,106,775	3.23
1982	110,362	373,175	483,537	9,726	345,465	141,431	1,384	0.020	0.694	0.284	0.003	498,007	4.51
1983	212,332	525,016	737,348	10,846	742,423	182,300	1,954	0.012	0.792	0.194	0.002	937,524	4.42
1984	142,898	412,322	555,220	6,013	332,870	154,201	7,957	0.012	0.664	0.308	0.016	501,040	3.51
1985	497,620	515,481	1,013,101	38,044	774,355	248,980	2,731	0.036	0.728	0.234	0.003	1,064,110	2.14
1986	281,218	318,028	599,246	0	394,853	279,127	4,093	0.000	0.582	0.412	0.006	678,074	2.41
1987	491,040	406,365	897,405	11,405	467,735	244,256	5,868	0.016	0.641	0.335	0.008	729,263	1.49
1988	200,526	353,242	553,768	31,057	147,205	113,206	9,343 c	0.103	0.489	0.376	0.031	300,812	1.50
1989	389,426	541,177	930,603	2,305	210,193	295,989 c	16,143	0.004	0.401	0.564	0.031	524,630	1.35
1990	312,962	350,100	663,062	527	496,940 c	335,347	29,182	0.001	0.576	0.389	0.034	861,996	2.75
1991	341,242	439,096	780,338	3,141 c	821,282	337,488		0.003	0.707	0.290		1,161,911 d	> 3.40
1992	248,576	148,846	397,422	5,420	624,608							630,028 g	> 2.53
1993	238,648	91,015	329,663	7,995									
1994	636,188	169,225	805,413										
1995	724,142	454,168	1,178,310										
1996	723,172	276,200	999,372										
Average	405,390	385,207	790,597										
	377,177	All Brood Years (1974-90)		34,857	529,813	182,775	5,883	0.045	0.676	0.269	0.009	753,326	2.42
	234,088	Even Brood Years (1974-90)		26,895	361,102	162,210	6,424	0.051	0.648	0.290	0.011	556,631	2.56
	538,152	Odd Brood Years (1974-90)		43,814	719,613	205,910	5,274	0.039	0.708	0.246	0.007	974,612	2.25

a The estimated number of salmon which returned are based upon annual age composition observed in lower Yukon test nets each year, weighted by test fish CPUE.
b Estimated annual escapement is the sum of fall chum salmon escapements observed in the Toklat, Delta, Sheenjak, and Fishing Branch Rivers doubled.
c Based upon expanded test fish age composition estimates in 1994, the year in which the test fishery terminated early.
d Brood year return includes only 3, 4, and 5 year fish, indicating that production (R/P) from brood year 1991 was at least 3.40.
g Brood year return includes only 3 and 4 year fish, indicating that production (R/P) from brood year 1992 was at least 2.53.

Appendix E.9. Coho salmon escapement counts for selected spawning areas in the Alaskan portion of the Yukon River drainage, 1972-1996. [a]

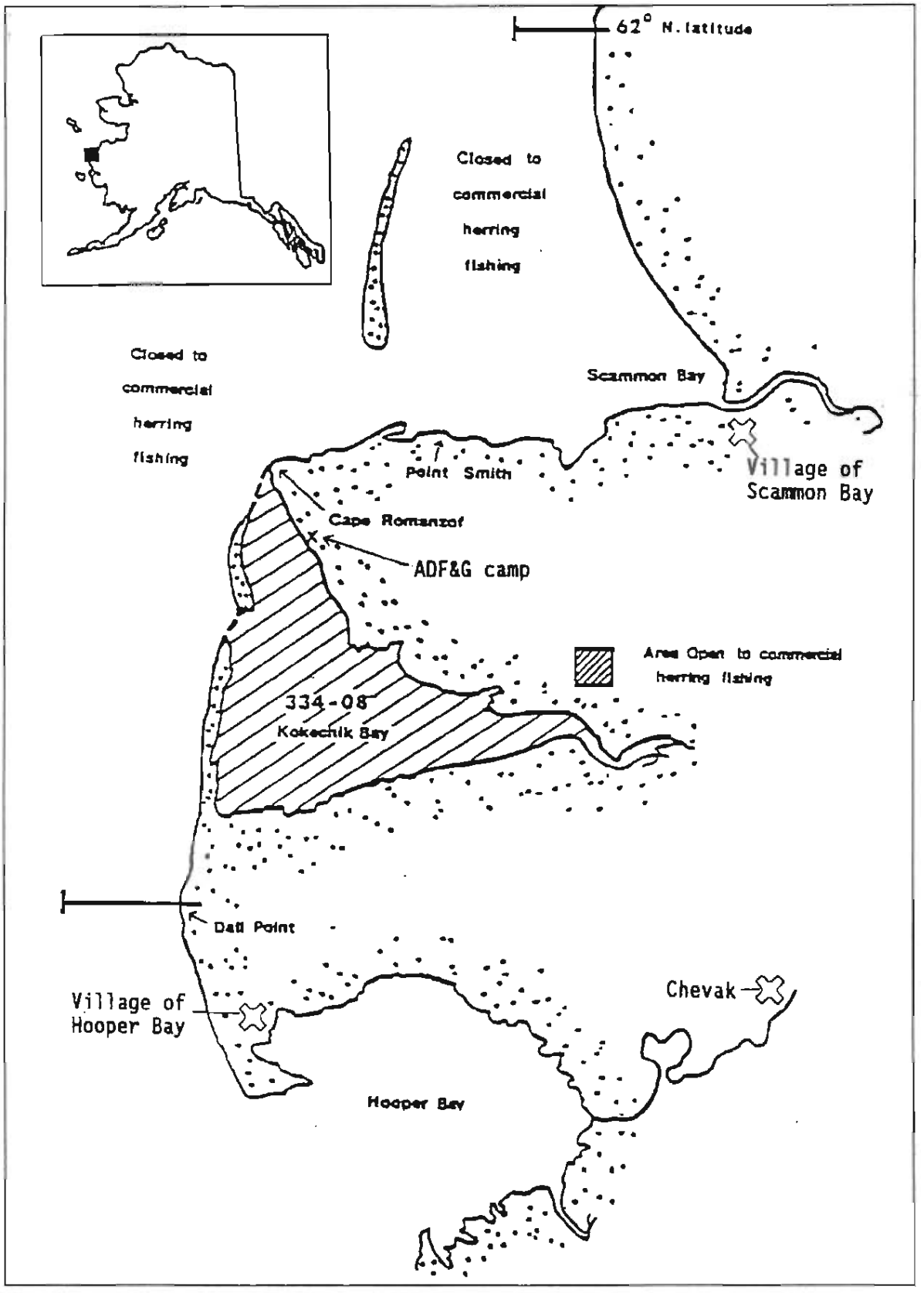
Year	Andreafsky River		Anvik River	Kantishna River		Nenana River				Delta Clearwater River [f,g]	Clearwater Lake and Outlet	Richardson Clearwater River
	East Fork	West Fork		Geiger Creek [b]	Barton Creek	Lost Slough	Nenana Mainstem [c]	Wood Creek [d]	Seventeen Slough			
1972										630	417	454 [k]
1973										3,322	551 [f]	375 [f]
1974						1,388			27	3,954 [l]	560	652 [f]
1975						943			956	5,100	1,575 [f,h]	4 [k]
1976			467 [k]	25 [j]		118			281	1,920	1,500 [f,h]	80 [k]
1977			81 [k]	60		524 [k]		310 [b]	1,167	4,793	730 [f,h]	327
1978						350		300 [b]	466	4,798	570 [f,h]	
1979						227			1,987	8,970	1,015 [f,h]	372
1980				3 [j]		499 [k]		1,603 [b]	592	3,946	1,545 [f,h]	611
1981	1,657 [k]					274		849 [n,r]	1,005	8,563 [p]	459 [k]	550
1982				81				1,436 [n,r]		8,365 [p]		
1983				42		766		1,042 [n]	103	8,019 [q]	253	88
1984				20 [j]		2,677		8,826 [n]		11,061	1,368	428
1985				42 [j]		1,584		4,470 [n]	2,081	5,358	750	
1986				5	496	794		1,664 [n]	218 [d]	10,857	3,577	146 [k]
1987				1,175		2,511		2,387 [n]	3,802	22,300	4,225 [f,h]	
1988	1,913	830	1,203	159	437	348		2,046 [n]		21,600	825 [f,h]	
1989				155	12 [k]			412 [n]	824 [k]	11,000	1,600 [f,h]	483
1990				211		688	1,308		15 [k]	8,325	2,375 [f,h]	
1991				427	467 [k]	564	447		52	23,900	3,150 [f,h]	
1992				77	55 [k]	372			490	3,963	229 [f,h]	500 [f]
1993				138	141	484	419	666 [n,r]	581	10,875	3,525 [f,h]	
1994				410	2,000 [n,r]	944	1,648	1,317 [n,r]	2,909	62,675 [r]	3,425 [f,h]	5,800 [f]
1995	10,901			142	192 [n,r]	4,169	2,218	500 [n]	2,972 [k]	20,100	3,625	
1996 [s]	8,037			233	0 [n]	2,040 [t]	2,171 [t]	201 [t]	3,668 [k,l]	14,075 [aa]	1,125 [f,j]	
E.O.										>9,000 [u]		

Continued

[a] Only peak counts presented. Survey rating is fair to good, unless otherwise noted. latest table revision: November 3, 1995.
[b] Foot survey.
[c] Mainstem Nenana River between confluences of Lost Slough and Teklanika River.
[d] Surveyed by F.R.E.D.
[f] Surveyed by Sport Fish division.
[g] Boat survey counts in the lower 17.5 river miles, unless otherwise indicated.
[h] Boat survey.
[j] Aerial survey.
[k] Poor survey.
[n] Weir count.
[p] Expanded estimate based on partial survey counts and historic distribution of spawners from 1977-1980.
[r] Coho weir was operated at the mough of Clear Creek (Shores Landing).
[s] Weir project terminated on October 4. Weir normally operated until mid to late October.
[t] Preliminary.
[u] Interim escapement objective established March, 1993, based on boat survey counts of coho in the lower 17.5 river miles during the period Oct. 21-27.
[w] A total of 298 coho salmon were passed between September 11 and October 4. However, it was estimated that 1,500 to 2,000 coho salmon passed the weir site within a 24-hour period beginning at approximately nooon on October 4. Weir operated from August 18 through morning of October 5, 1994.
[x] Weir project teminated September 27. Weir normally operated until mid-October.
[y] An additional 17,565 coho salmon were counted by helicopter in the Delta Clearwater outside of the normal mainstem index area.
[z] An additional 1,000 coho salmon were estimated pooled downstream of weir on October 2, just prior to weir removal.
[a] An additional 3,300 coho salmon were counted by helicopter in the Delta Clearwater outside of the normal mainstem index area.

APPENDIX F

CAPE ROMANZOF HERRING DISTRICT FISHERY



Appendix F.1. Map of Cape Romanzof Herring District.

Appendix F.2. Commercial herring harvest and effort data by fishing period, Cape Romanzof District, 1996.

Period	Date	Time of Fishery	Number				Harvest (st)			Roe %
			Hours Fished	Fishermen	Vessels	Landings	Bait	Sac Roe	Total	
1	May 17	0100-0200	1.0	4	4	4	0.0	0.4	0.4	10.28
2	May 18	1430-1730	3.0	56	56	83	0.0	103.4	103.4	9.61
3	May 19	0200-0600	4.0	2	2	2	0.0	1.8	1.8	10.10
4	May 19	1530-1800	2.5	56	56	91	1.4	136.5	137.9	10.86
5	May 20	0400-0700	3.0	6	6	6	0.0	2.2	2.2	7.95
6	May 21 (Extended 1 Hour)	0500-0800	3.0	9	9	9	0.0	1.3	1.3	13.99
7	May 21	1500-1900	4.0	62	62	100	0.0	97.9	97.9	10.75
8	May 22	0430-0800	3.5	46	46	61	0.0	63.8	63.8	11.85
9	May 22	1500-2100	6.0	62	62	188	0.0	281.7	281.7	10.86
10	May 25 (Extended 2 Hours)	1800-2200	4.0	41	41	59	0.0	61.3	61.3	9.32
Total			34.0	63	63	603	1.4	750.3	751.7	10.63

Appendix F.3. List of Lower Yukon Area emergency orders pertaining to the Cape Romanzof Herring District, 1996.

E.O. Number	Effective Date	Action Taken	Comments
3-LY-H-01-96	May 17	Established a 1-hour commercial herring fishing period beginning 1:00 a.m. Friday, May 17 until 2:00 a.m. Friday, May 21. Also restricted gear to no more than 50 fathoms and one gillnet per vessel.	Test fishing crew began catching herring on May 14. The first spawn was documented on May 13. Test samples taken on May 16 indicated a majority of herring were ripe. Estimated roe recovery was 12.5% for 3 inch mesh gillnet samples. Because of the small size of vessels and short fishing time, it was warranted to restrict gear to no more than 50 fathoms and one gillnet per vessel.
3-LY-H-02-96	May 18	Established a 3-hour commercial herring fishing period beginning 2:30 p.m. Saturday, May 18 until 5:30 p.m. Saturday, May 18. Also restricted gear to no more than 50 fathoms and one gillnet per vessel.	Herring samples obtained by commercial fishermen indicated a majority of the fish were ripe with a roe recovery ranging from 10.2% to 16.8% and averaged 13.3% for 3 inch mesh gillnet samples. The preseason harvest projection was 683 st. Due to poor weather and low effort, 0.4 tons of herring were harvested during the first period.
3-LY-H-03-96	May 19	Established a 4-hour commercial herring fishing period beginning 2:00 a.m. Sunday May 19 until 6:00 a.m. Sunday May 19. Also restricted gear to no more than 50 fathoms and one gillnet per vessel.	Approximately 104 tons of herring with an average of 9.6% roe was harvested during the last commercial fishing period. The preseason harvest projection was 683 tons. Fishermen were notified to watch the weather and use their own judgment on night time fishing conditions.

E.O. Number	Effective Date	Action Taken	Comments
3-LY-H-04-96	May 19	Established a 2.5-hour commercial herring fishing period beginning 3:30 p.m. May 19 until 6:00 p.m. Monday, May 19. Also restricted gear to no more than 50 fathoms and one gillnet per vessel.	Herring samples obtained by commercial fishermen indicated a majority of the fish were ripe with a roe recovery ranging from 9.2% to 14.1% and averaged 11.3% for 3 inch mesh gillnet samples. Approximately 1.8 tons of herring with an average of 10.1% roe was harvested during the last commercial fishing period. The harvest was low because of poor weather conditions and low effort. The cumulative harvest is 106 tons The preseason harvest projection was 683 tons.
3-LY-H-05-96	May 20	Established a 3-hour commercial herring fishing period beginning 4:00 a.m. Monday, May 20 until 7:00 a.m. Monday, May 20. Also restricted gear to no more than 50 fathoms and one gillnet per vessel.	The preseason harvest projection was 683 st. The cumulative harvest to date is 245 st. Approximately 139 tons of herring with an average of 10.8% roe were harvested during the last commercial fishing period. Fishermen were notified to watch the weather and use their own judgment on night time fishing conditions.
3-LY-H-06-96	May 21	Established a 2-hour commercial herring fishing period beginning 5:00 a.m. Tuesday, May 21 until 7:00 a.m. Tuesday, May 21. Also restricted gear to no more than 50 fathoms and one gillnet per vessel.	The cumulative harvest to date is 247 st. Approximately 2.1 tons of herring with an average of 8.3% roe was harvested during the last commercial fishing period, because of poor weather conditions. Fishermen were notified to watch the weather and use their own judgment on night time fishing conditions.

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E.O. Number	Effective Date	Action Taken	Comments
3-LY-H-07-96	May 21	Extends the 2-hour commercial herring fishing period established by emergency order 3-LY-H-06-96 by 1-hour. Also restricted gear to no more than 50 fathoms and one gillnet per vessel.	In order to gather more information on roe recovery and percentage of female herring present on the fishing grounds, a one hour extension to the commercial fishing period was warranted.
3-LY-H-08-96	May 21	Established a 4-hour commercial herring fishing period beginning 7:00 p.m. Tuesday, May 21 until 11:00 p.m. Tuesday, May 21. Also restricted gear to no more than 50 fathoms and one gillnet per vessel.	Approximately 1.3 tons of herring with an average of 15.0% roe was harvested during the last commercial fishing period. The harvest was low due to poor weather and low abundance of fish. The preseason harvest projection was 683 st. The cumulative harvest to date is 248 st. Fishermen were notified to watch the weather and use their own judgment on night time fishing conditions.
3-LY-H-09-96	May 22	Established a 3.5-hour commercial herring fishing period beginning 4:30 a.m. Wednesday May 22 until 8:00 a.m. Wednesday May 22. Also restricted gear to no more than 50 fathoms and one gillnet per vessel.	Approximately 98 tons of herring with an average of 10.9% roe was harvested during the last commercial fishing period. Based on the roe recovery during the last commercial opening, a 3.5-hour commercial fishing period was is warranted.

Appendix F.3. (page 4 of 4)

E.O. Number	Effective Date	Action Taken	Comments
3-LY-H-10-96	May 22	Established a 6-hour commercial herring fishing period beginning 3:00 p.m. Wednesday May 22 until 9:00 p.m. Wednesday May 22. Also restricted gear to no more than 50 fathoms and one gillnet per vessel.	The preseason harvest projection was 683 st. The cumulative harvest to date is 410 st. Approximately 63.7 tons of herring with an average of 11.7% roe were harvested during the morning commercial fishing period.
3-LY-H-11-96	May 25	Established a 2-hour commercial herring fishing period beginning 6:00 p.m. Saturday, May 25 until 8:00 p.m. Saturday, May 25. Also restricted gear to no more than 50 fathoms and one gillnet per vessel.	The preseason harvest projection was 683 st. The cumulative harvest to date is 691 st. The herring biomass is estimated to be above the preseason projection. Based on spawn deposition study results, there was estimated to be an additional 50 to 100 tons of herring available for harvest.
3-LY-H-12-96	May 25	Extends the 2-hour commercial herring fishing period established by emergency order 3-LY-H-11-96 by 2-hours. Also restricted gear to no more than 50 fathoms and one gillnet per vessel.	Based on the commercial test samples collected prior to the period indicating good roe quality and to allow a harvest between 50 and 100 tons a 2-hour extension was warranted.

Appendix F.4. Commercial herring fishery data, Cape Romanzof District, 1980-1996.

	1980	1981	1982	1983[a]	1984	1985	1986	1987[b]	1988	1989	1990	1991	1992	1993	1994	1995	1996	5 Yr. Ave. 1991-95
Catch (st)	611	720	657	816	1,185	1,299	1,865	1,342	1,119	926	329	526	530	371	456	541	752	485
Hours Fished	326	120	180	144	90	60	42	8	11	13	3	5	6	13	7	15	34	9
Percent Roe Recovery	9.8	8	9.3	9	8.6	8.3	9.2	8.9	9.1	9.33	8.4	8.8	8	9.6	9.2	10.1	10.63	9.14
Estimated Value ($ millions)	0.13	0.21	0.22	0.37	0.31	0.55	1.14	1	1.02	0.49	0.15	0.21	0.16	0.11	0.12	0.33	0.64	0.186
Number of Buyers	2	4	2	3	3	2	5	9	6	6	4	2	2	2	2	2	3	2
Number of Fishermen	69	111	75	63	66	73	97	157	113	115	95	80	73	41	55	49	63	60
Number of Boats	54	82	50	57	59	69	90	152	108	110	90	79	73	41	54	49	63	59
Number of Boats with Shakers[c]	12	11	10	2	1	2	12	22	-	-	-	-	-	-	-	-	-	-
% Effort by Local Fishermen[d]	70	81	85	92	99	91	84	53	63	87	76	96	97	95	95	98	95	96
% Harvest by Local Fishermen[d]	40	60	84	88	100	94	70	33	60	82	77	97	96	91	92	99	96	95
Biomass Estimate[e]	3,000	4,900	4,900	5,500	6,100	7,000	7,500	7,200	6,600	4,400	4,500	4,500	4,500	4,000	5,000	5,000	6,000	4,600
Exploitation Rate	20.4	14.7	13.4	14.8	19.4	18.6	24.9	18.6	17.0	21.0	7.3	11.7	11.8	9.3	9.1	10.8	12.5	10.5

[a] Exclusive Use Regulation into effect.
[b] Last year hydraulic shakers were allowed
[c] Numbers of boats using shakers were estimated.
[d] Local fishermen described as residents of Chevak, Scammon Bay, and Hooper Bay.
[e] Biomass estimate is a qualitative estimate of herring abundance, except for aerial survey biomass estimate in 1987.

Appendix F.5. CFEC herring gear permits issued by residence, Cape Romanzof District, 1996. a

Residence	GillNet Permits (G34Y)
Hooper Bay	43
Scammon Bay	20
Chevak	16
Bethel	1
Kotlik	1
Kwethluk	1
Mountain Village	1
Olympia, WA	1
Olympic, WA	1
	85

[a] Counts are for initial issues only and do not include transfers. Counts include interim use permits.

Appendix F.6. Pacific herring processors and associated data, Cape Romanzof District, 1996.

Commerical Operation (Processing location/ buying station)	Representative	Product	Processing/Tendering Vessels
Icicle Seafoods P.O. Box 79003 Seattle, WA 98119	Dave McIntyre	Sac Roe Herring (Frozen)	M/V Rebel M/V Chichagof
NorQuest Fisheries 4225 23rd Ave. W. Seattle, WA 98119	Marty Jacques	Sac Roe Herring (Frozen)	P/V Aleutian Falcon M/V Tracy-D M/V Afognak M/V Zingaro M/V Mr. Shypoke
Woodbine Alaska Fish Co. P.O. Box 218 Naknek, AK 99633	Steve Goshtigin	Sac Roe Herring (Frozen)	M/V Erin Lynn

Appendix F.7. Test sample data collected by commercial fishermen, Cape Romanzof District, 1996.

Capture Date/Time	Mesh Size (inches)	Sample Size Wt.(kg)	Sample Size N	% Female	Female % Gonad Maturity Green	Ripe	Spent	% Roe	Capture Location
May 15	3	10.0	26	27	14	57	28	3.2	onshore 1/2 mile north of ADF&G camp (North Point)
1300	3	10.0	30	43	8	69	23	7.0	onshore 1/2 mile north of ADF&G camp (North Point)
	3	10.0	29	45	0	69	31	8.9	onshore 1/2 mile north of ADF&G camp (North Point)
	3	10.0	27	48	0	92	8	11.6	onshore 1/2 mile south of ADF&G camp (South Point)
	3	10.0	29	45	0	69	31	8.9	onshore 1/2 mile south of ADF&G camp (South Point)
	3	10.0	27	33	11	78	11	6.1	onshore 1/2 mile south of ADF&G camp (South Point)
	3	10.0	27	44	0	92	8	8.8	onshore 1/4 mile south of South Point
	Total	70.0	195	41	4	76	20	7.8	
May 15	3	10.0	27	59	25	75	0	11.0	onshore 1/2 mile north of ADF&G camp(North Point)
2345	3	10.0	29	66	5	79	16	10.5	onshore 1/2 mile north of ADF&G camp(North Point)
	3	10.0	28	46	15	85	0	9.0	onshore 1/2 mile north of ADF&G camp(North Point)
	3	10.0	24	71	6	94	0	13.8	onshore 1/2 mile south of ADF&G camp (South Point)
	Subtotal	40.0	108	60	12	83	5	11.1	
	2.5	10.0	23	69	6	81	13	12.5	onshore 1/2 mile south of ADF&G camp (South Point)
	2.5	10.0	30	50	20	73	7	8.0	onshore 1/2 mile south of ADF&G camp (South Point)
	Subtotal	20.0	53	58	13	77	10	10.3	
	Total	60.0	161	60	14	81	6	10.8	
May 16	3	10.0	28	50	7	86	7	10.3	onshore 1/2 mile north of ADF&G camp (North Point)
2350	3	10.0	26	62	0	100	0	14.7	onshore 1/2 mile north of ADF&G camp (North Point)
	Total	20.0	54	50	0	97	3	12.5	
May 18	3	10.0	30	43	0	100	0	10.2	onshore 1/2 mile north of ADF&G camp (North Point)
1430	3	10.0	27	56	0	100	0	13.0	onshore 1/2 mile north of ADF&G camp (North Point)
	3	10.0	24	75	0	100	0	16.8	onshore 1/2 mile north of ADF&G camp (North Point)
	Total	30.0	81	57	0	100	0	13.3	

-Continued-

Appendix F.7. (page 2 of 2).

Capture Date/Time	Mesh Size (inches)	Sample Size Wt.(kg)	Sample Size N	% Female	Female % Gonad Maturity Green	Ripe	Spent	% Roe	Capture Location
May 19	3	10.0	25	52	0	100	0	11.2	onshore 1/2 mile north of ADF&G camp (North Point)
1400-	3	10.0	24	50	0	100	0	10.5	1 mile north of ADF&G camp
1430	3	10.0	25	48	0	92	8	11.4	1/2 mile south of ADF&G camp (South Point)
	3	10.0	23	43	0	90	10	9.2	1/2 mile south of ADF&G camp (South Point)
	3	10.0	26	54	0	100	0	14.1	1/2 mile south of ADF&G camp (South Point)
	Total	50.0	123	50	0	97	3	11.3	
May 25	3.25	10.0	22	64	0	100	0	14.7	onshore 1 mile north of ADF&G camp (Tim's camp)
0745-	3.25	10.0	23	52	0	75	25	10.9	onshore 1 mile north of ADF&G camp (Tim's camp)
0830	Subtotal	20.0	45	58	0	88	12	12.8	
	3	10.0	29	55	6	94	0	11.0	offshore ADF&G camp
	3	10.0	26	62	31	63	6	10.7	offshore ADF&G camp
	3	10.0	28	50	36	64	0	7.2	1/2 mile south of ADF&G camp (South Point)
	3	10.0	34	65	5	68	27	9.8	1/2 mile south of ADF&G camp (South Point)
	Subtotal	40.0	117	58	18	72	10	9.7	
	Total	60.0	162	58	13	76	11	10.7	
May 25	3	10.0	28	43	0	100	0	9.7	1/4 mile north of ADF&G camp at point
1630-	3	10.0	28	54	0	93	7	11.5	1/4 mile north of ADF&G camp at point
1700	3	10.0	25	67	0	80	20	12.3	1 mile north of ADF&G camp (Tim's camp)
	3	10.0	28	61	0	76	24	12.0	1 mile north of ADF&G camp (Tim's camp)
	Subtotal	40.0	109	54	0	86	14	11.4	
	3.25	10.0	25	60	0	87	13	13.3	1 mile north of ADF&G camp (Tim's camp)
	3.25	10.0	27	67	11	83	6	17.0	1 mile north of ADF&G camp (Tim's camp)
	Subtotal	20.0	52	63	9	85	6	15.2	
	Total	60.0	161	57	2	86	12	12.6	

Appendix F.8. Subsistence herring harvest (st) and effort data by village, Cape Romanzof, 1975-1996.[a]

	Scammon Bay		Chevak		Hooper Bay		Totals	
Year	Harvest(st)	Number of Fishermen	Harvest(st)	Number of Fishermen	Harvest(st)	Number of Fishermen	arvest(st)	Number of Fishermen
1975	-	-	-	-	2.8	34	2.8	34
1976	0.7	4	0.7	9	3.0	28	4.4	41
1977	-	-	0.2	2	2.4	28	2.5	30
1978	0.7	1	-	-	3.9	29	4.5	30
1979	6.0	21	2.3	21	3.1	42	11.4	84
1980	3.1	18	3.6	20	3.7	23	10.4	61
1981	7.7	16	1.8	9	4.0	20	13.5	45
1982	3.9	15	1.9	10	4.7	18	10.5	43
1983	2.5	14	1.5	5	5.2	18	9.2	37
1984	4.3	16	2.6	7	4.2	24	11.1	47
1985	2.4	11	2.2	13	3.4	20	8.0	44
1986	2.8	17	0.7	4	2.5	19	6.0	40
1987	1.4	8	0.5	5	1.1	10	3.0	23
1988	2.0	7	1.5	6	3.6	19	7.2	32
1989	1.1	7	0.1	1	1.8	16	3.0	24
1990	1.7	5	0.6	3	5.6	24	7.9	32
1991	1.7	7	0.4	3	1.1	8	3.2	18
1992	1.2	10	0.4	4	2.5	16	4.1	30
1993	2.7	17	0.1	1	2.4	24	5.1	42
1994	1.4	9	2.0	16	3.1	23	6.5	48
1995	1.1	11	1.2	9	3.8	22	6.1	42
1996	1.0	10	0.5	4	1.7	15	3.1	29

[a] Subsistence survey results are believed to reflect harvest trends, however, reported catches reflect minimum figures since all fishermen cannot be contacted. Note: Data are updated annually as new information is obtained.

Appendix F.9. Subsistence harvest of roe-on-kelp by village, Cape Romanzof District, 1993-1996.

	Scammon Bay		Chevak		Hooper Bay		Totals	
Year	Number of Fishers	Pounds Roe-on-Kelp	Number of Fishers	Pounds Roe-on-Kelp	Number of Fishers	Pounds Roe-on-Kelp	Number of Fishers	Pounds Roe-on-Kelp
1993	9	300			10	213	19	513
1994	7	104	4	135	12	417	23	656
1995	12	298	1	25	13	383	26	706
1996	7	113	2	31	9	480	18	624

Appendix F.10. Aerial survey biomass estimates of Pacific herring, Cape Romanzof District, 1996.

Date	Flight No.	Flight Hrs.	Survey Rating[b]	Spawn No.	Spawn Length (miles)	Biomass (st) Estimates by Index Area[a] KOK	SCB	HPB	Total
May 14	1	0.25	5	0	0.00	60.8	1.5		62.3
May 15	2	0.50	5	0	0.00	0.0	0.0		0.0
May 18	3	0.55	5	0	0.00	0.0	114.0		114.0
May 21	4	0.33	5	0	0.00	50.0	0.0		50.0
May 22	5	0.67	5	0	0.00	295.0	106.0		401.0
May 24	6	1.00	5	0	0.00	50.0	188.5		238.5
May 25	7	0.92	5	0	0.00	80.0	134.0		214.0
May 26	8	0.75	4	0	0.00	138.0	160.0	95.5	393.5
June 4	9	0.16	5	0	0.00	0.0	0.0		0.0
Total		5.13		0	0.00				

[a] Index Areas: KOK-Kokechik Bay and offshore waters from Cape Romanzof to Hooper Bay
SCB-Scammon Bay (Cape Romanzof to Kun River), HPB - Hooper Bay.

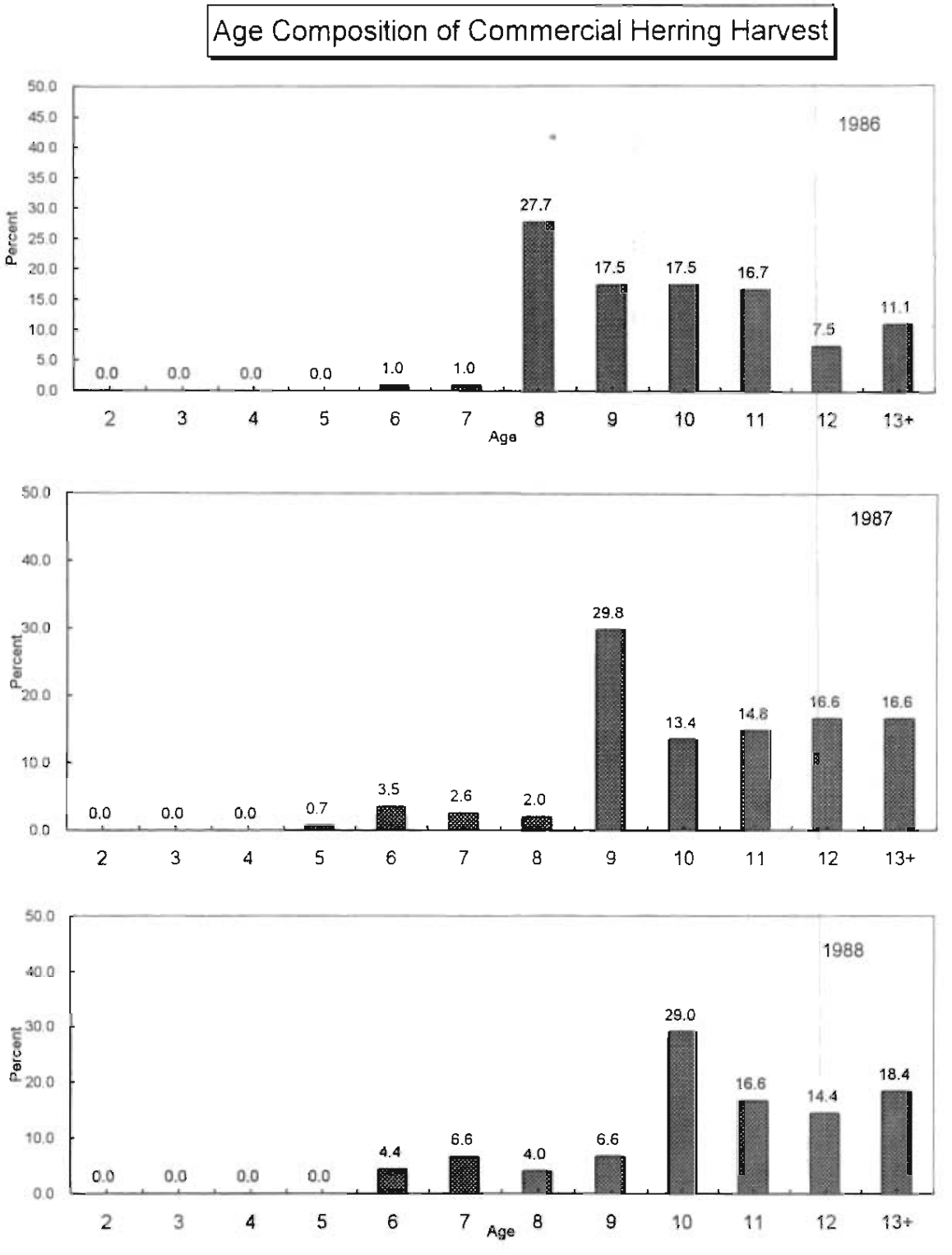
[b] Survey Rating
1=Excellent (calm, no glare)
2=Good (light ripple, uneven lighting, easy to see schools)
3=Fair (light chop, some glare or shadows, relatively easy to see schools)
4=Poor (rough seas, strong glare, difficult to see schools)
5=Unsatisfactory

Appendix F.11. Percent age composition of herring sampled from commercial harvest, Cape Romanzof District, 1980-1996. [a]

Year	Number Sampled [b]	Age in Years												Total [c]
		2	3	4	5	6	7	8	9	10	11	12	13+	
1980	374	0.0	2.4	20.1	5.1	38.0	9.9	23.0	0.5	0.3	0.5	0.3	0.0	100.1
1981	315	0.0	0.3	55.9	25.1	1.6	11.7	2.2	3.2	0.0	0.0	0.0	0.0	100.0
1982	604	0.0	0.2	13.7	66.4	13.2	1.2	3.3	1.0	1.0	0.0	0.0	0.0	100.0
1983	913	0.0	0.0	15.8	29.8	45.1	6.7	0.4	1.6	0.4	0.1	0.0	0.0	99.9
1984	543	0.0	0.0	0.6	17.3	35.2	41.3	2.9	1.7	0.6	0.4	0.2	0.0	100.2
1985	583	0.0	0.0	6.5	8.9	34.6	29.3	16.6	3.4	0.5	0.0	0.0	0.0	99.8
1986	570	0.0	0.0	0.0	3.3	3.5	30.2	29.6	29.3	3.2	0.5	0.4	0.0	100.0
1987	407	0.0	0.0	0.0	0.0	5.9	18.4	43.0	27.8	4.4	0.5	0.0	0.0	100.0
1988	414	0.0	0.0	0.0	2.2	7.5	18.4	16.2	24.6	19.1	10.9	1.2	0.0	100.1
1989	702	0.0	0.0	0.0	0.6	3.3	13.0	29.8	11.5	18.5	15.0	7.5	0.9	100.1
1990	287	0.0	0.0	0.0	0.7	9.1	10.8	21.6	23.7	9.8	13.2	7.7	3.5	100.1
1991	591	0.0	0.0	0.0	0.2	1.0	29.1	17.4	15.4	13.4	9.0	8.6	5.9	100.0
1992	401	0.0	0.0	0.0	0.0	1.0	1.0	27.7	17.5	17.5	16.7	7.5	11.1	100.0
1993	819	0.0	0.0	0.0	0.7	3.5	2.6	2.0	29.8	13.4	14.8	16.6	16.6	100.0
1994	452	0.0	0.0	0.0	0.0	4.4	6.6	4.0	6.6	29.0	16.6	14.4	18.4	100.0
1995	453	0.0	0.0	0.0	0.7	1.3	13.7	19.4	5.5	6.8	24.7	10.6	17.2	99.9
1996	588	0.0	0.0	0.0	0.0	2.9	1.0	27.4	20.6	8.3	8.3	15.6	15.9	100.0

[a] Data from annual Age, Size, and Sex Composition ADF&G Technical Data and RIR Reports.
[b] Number sampled shown are number of fish which could be aged.
[c] Totals may not equal 100% due to rounding errors.

Appendix F.12. Age composition of Pacific herring sampled from the commercial harvest, Cape Romanzof District, 1986-1995.



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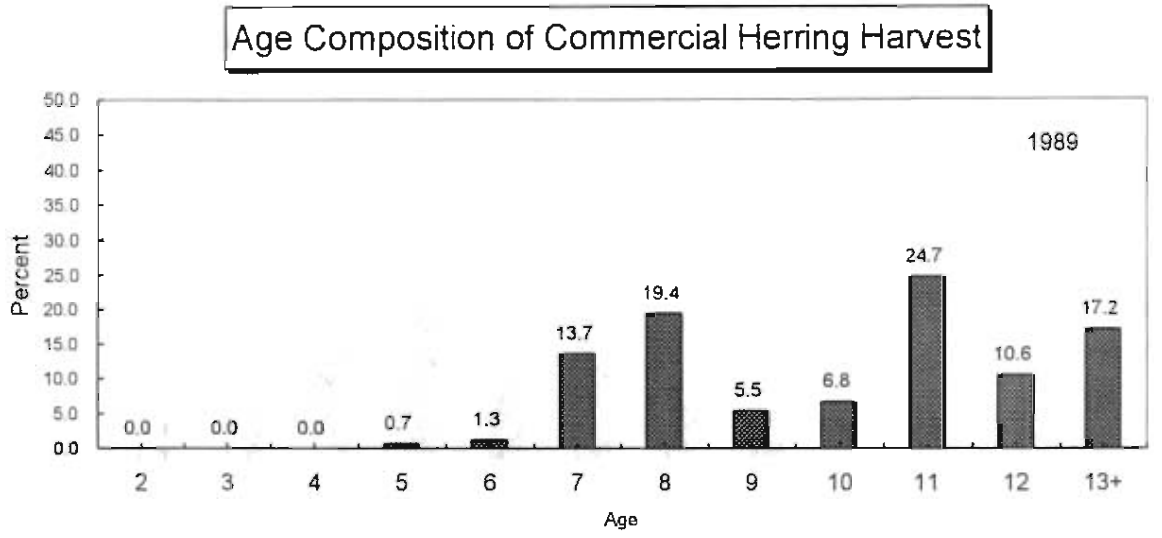
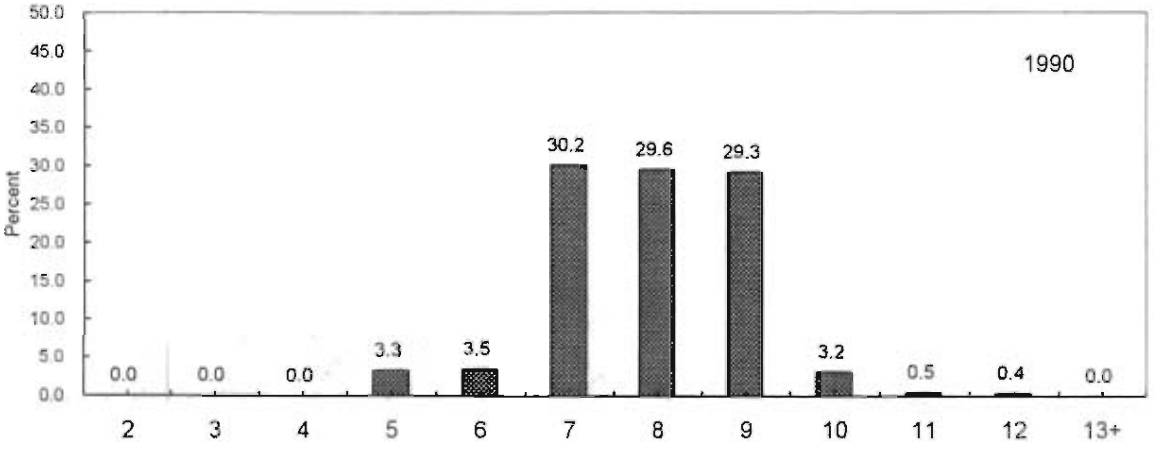
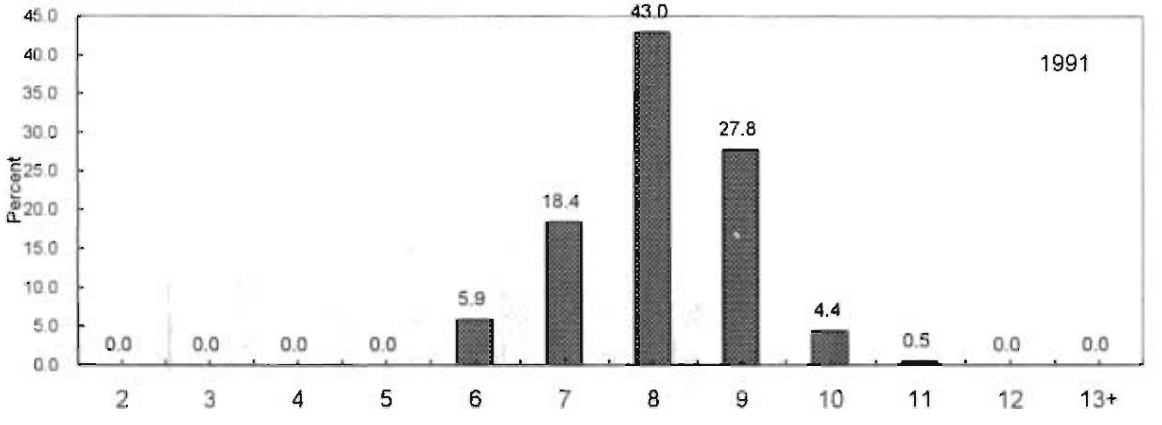
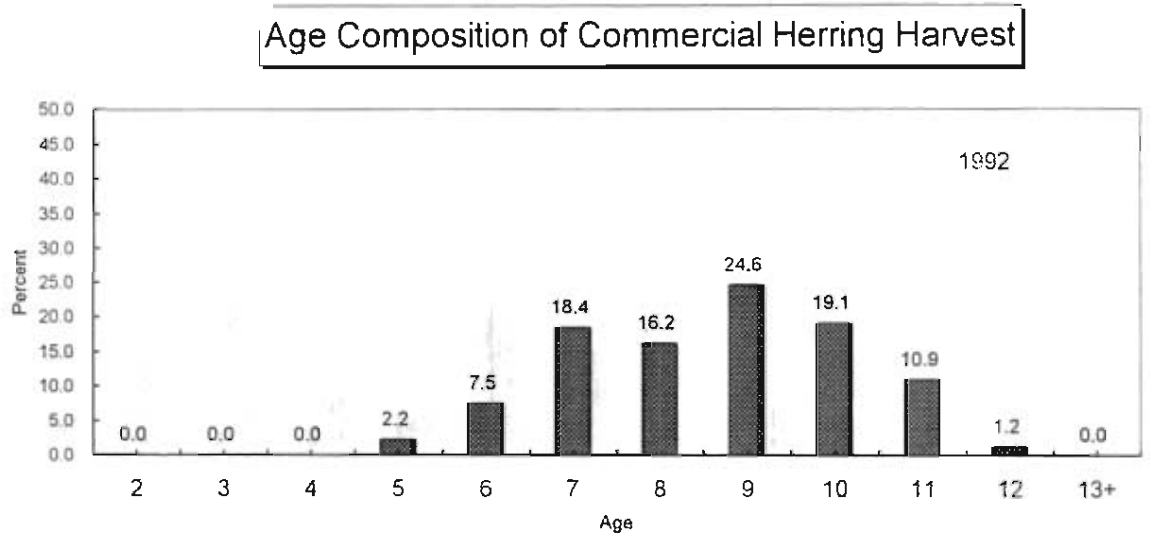
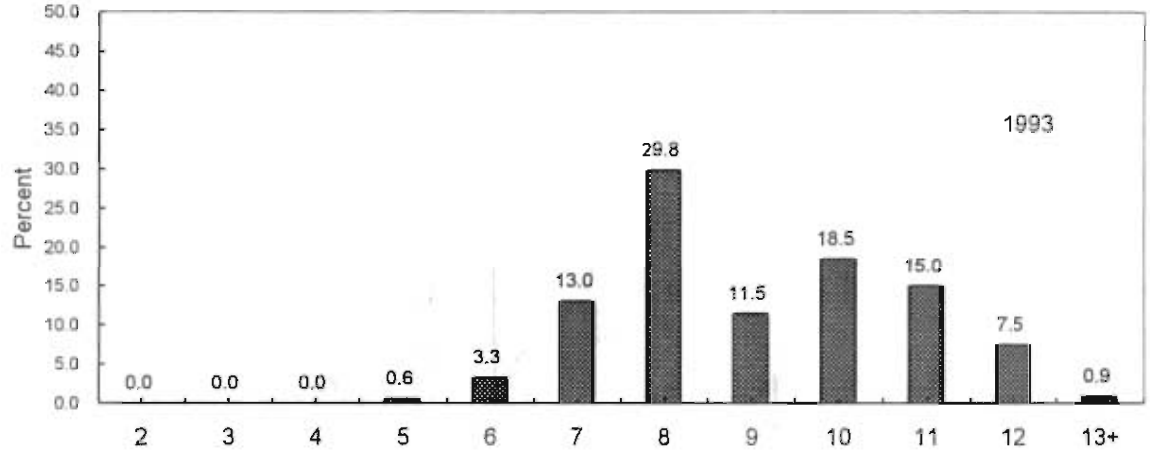

Age Composition of Commercial Herring Harvest
1989
Percent
Age
0.0
0.0
0.0
0.7
1.3
13.7
19.4
5.5
6.8
24.7
10.6
17.2
2
3
4
5
6
7
8
9
10
11
12
13+

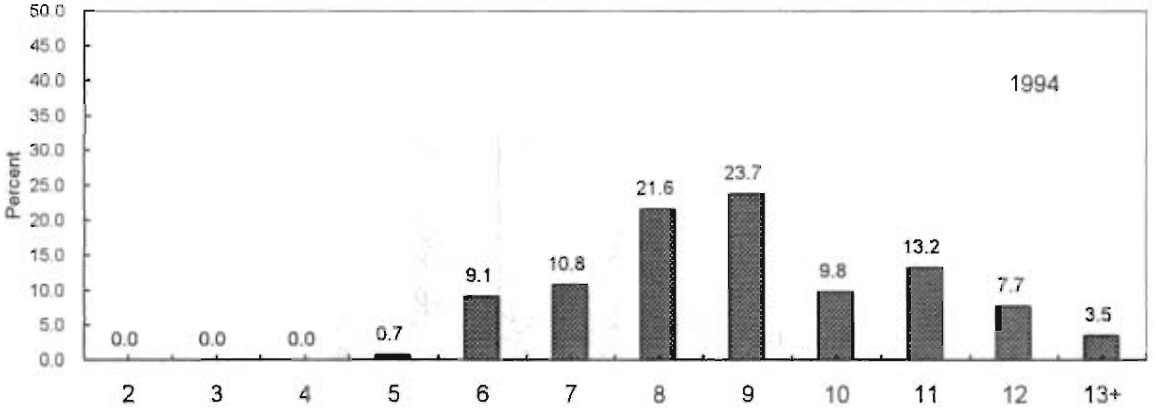

1990
Percent
0.0
0.0
0.0
3.3
3.5
30.2
29.6
29.3
3.2
0.5
0.4
0.0
2
3
4
5
6
7
8
9
10
11
12
13+


1991
Percent
0.0
0.0
0.0
0.0
5.9
18.4
43.0
27.8
4.4
0.5
0.0
0.0
2
3
4
5
6
7
8
9
10
11
12
13+

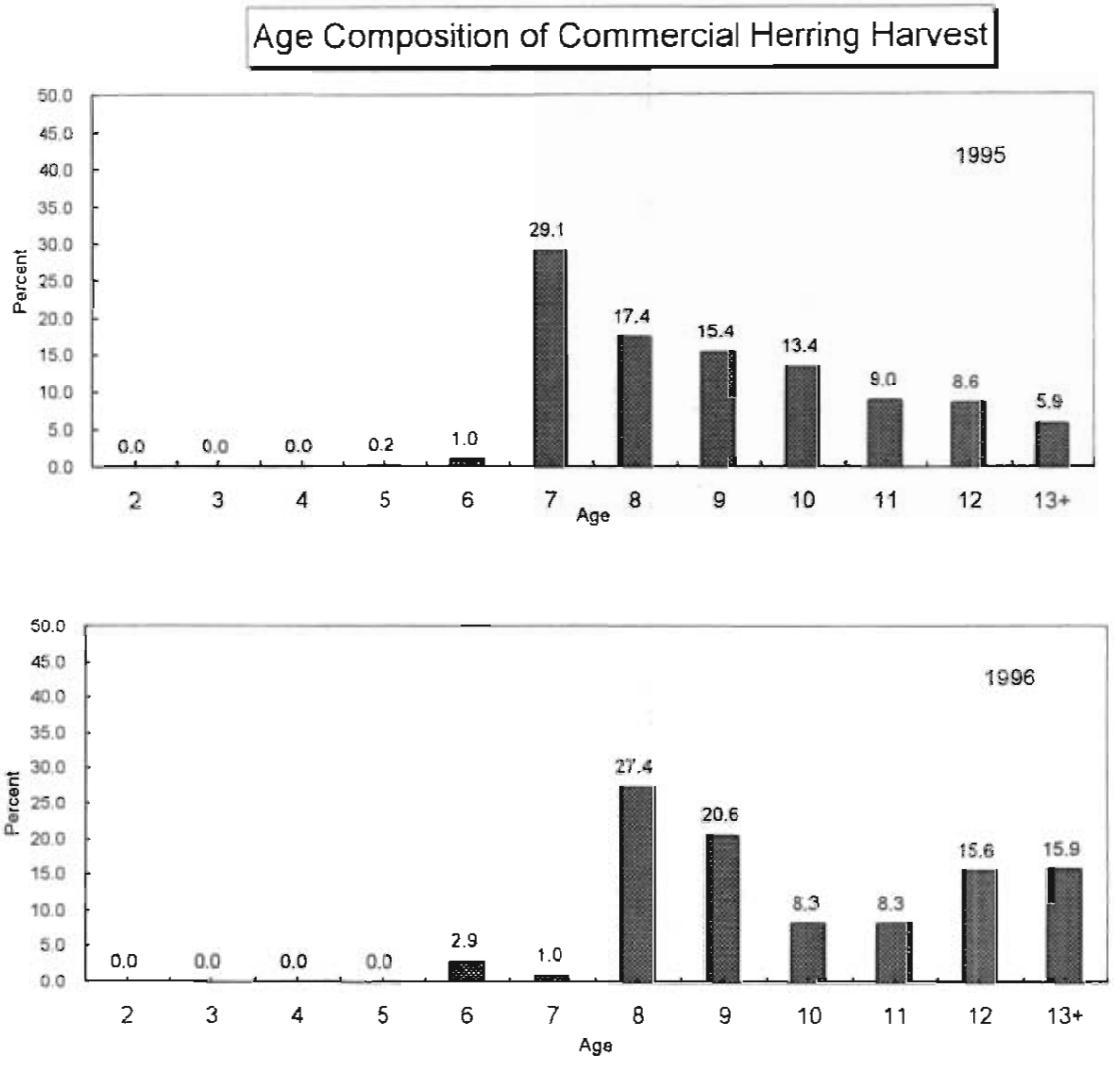
-Continued-


Age Composition of Commercial Herring Harvest
1992
Percent
Age
0.0
0.0
0.0
2.2
7.5
18.4
16.2
24.6
19.1
10.9
1.2
0.0
2 3 4 5 6 7 8 9 10 11 12 13+


1993
Percent
0.0
0.0
0.0
0.6
3.3
13.0
29.8
11.5
18.5
15.0
7.5
0.9
2 3 4 5 6 7 8 9 10 11 12 13+


1994
Percent
0.0
0.0
0.0
0.7
9.1
10.8
21.6
23.7
9.8
13.2
7.7
3.5
2 3 4 5 6 7 8 9 10 11 12 13+

-Continued-

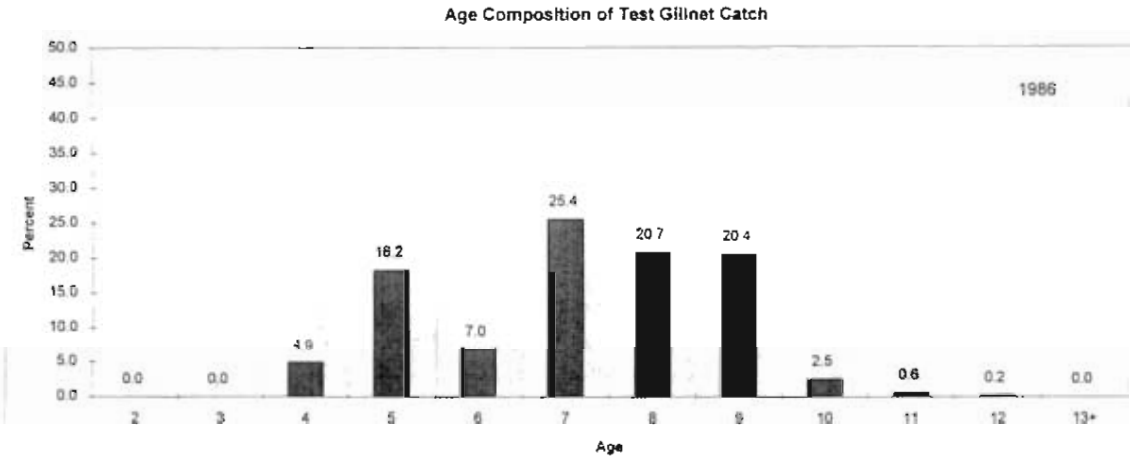

Age Composition of Commercial Herring Harvest
1995
Percent
Age
0.0
0.0
0.0
0.2
1.0
29.1
17.4
15.4
13.4
9.0
8.6
5.9
1996
0.0
0.0
0.0
0.0
2.9
1.0
27.4
20.6
8.3
8.3
15.6
15.9

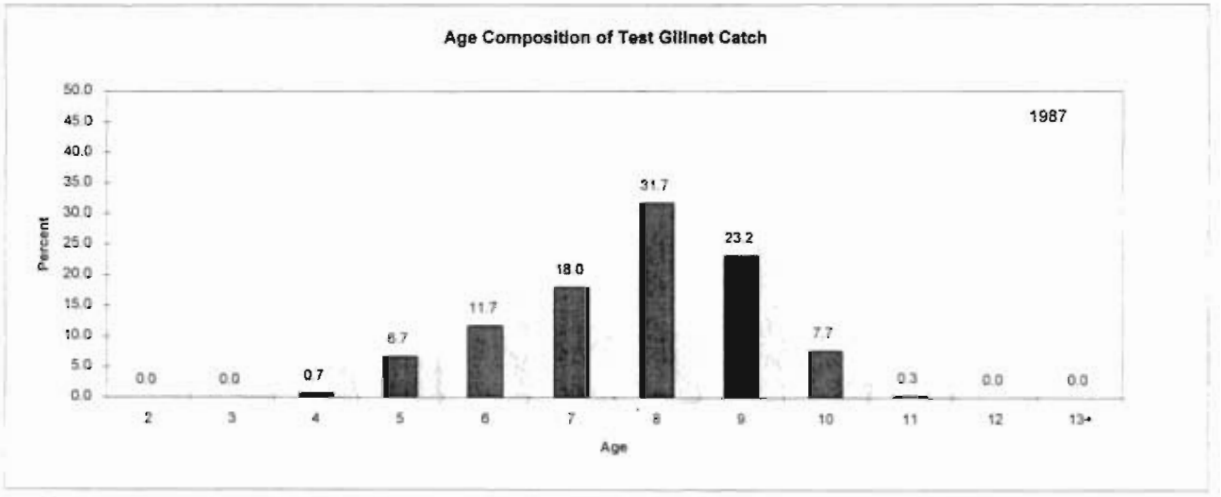
Appendix F.13. Percent age composition of herring sampled from variable mesh gillnet catches, Cape Romanzof District, 1980-1996. [a, b]

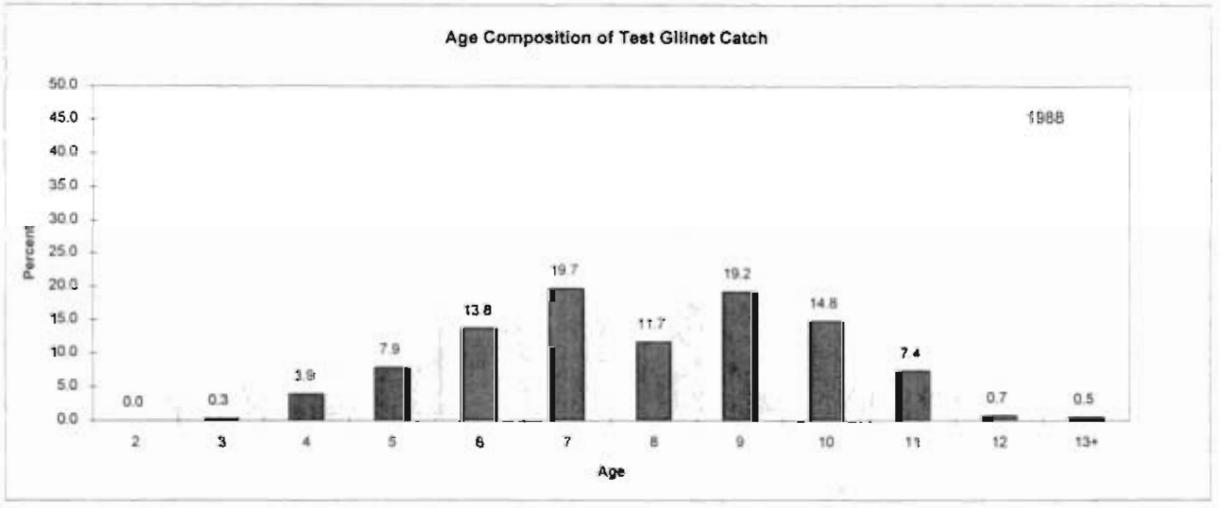
Year	Number Sampled [c]	Age in Years 2	3	4	5	6	7	8	9	10	11	12	13+	Total [d]
1980	447	0.4	19.2	17.0	2.0	27.3	6.9	25.3	0.4	0.4	0.4	0.4	0.0	99.7
1981	589	0.0	7.8	55.3	13.2	1.5	10.4	4.8	6.3	0.2	0.0	0.3	0.2	100.0
1982	611	0.7	7.5	20.3	39.3	9.5	1.8	7.4	7.2	5.6	0.7	0.0	0.2	100.2
1983	829	0.0	0.6	21.2	25.2	39.8	5.3	1.4	3.9	1.9	0.5	0.1	0.0	99.9
1984	735	0.0	1.5	5.7	26.9	19.3	36.1	4.8	3.5	1.6	0.3	0.3	0.0	100.0
1985	531	0.0	1.7	21.8	6.4	22.8	16.9	26.2	2.8	0.8	0.6	0.0	0.0	100.0
1986	511	0.0	0.0	4.9	18.2	7.0	25.4	20.7	20.4	2.5	0.6	0.2	0.0	99.9
1987	690	0.0	0.0	0.7	6.7	11.7	18.0	31.7	23.2	7.7	0.3	0.0	0.0	100.0
1988	608	0.0	0.3	3.9	7.9	13.8	19.7	11.7	19.2	14.8	7.4	0.7	0.5	99.9
1989	378	0.0	0.5	1.9	17.5	9.0	13.2	17.7	7.4	11.6	13.2	6.9	1.0	99.9
1990	1,011	0.0	1.0	4.7	3.6	24.6	11.2	12.7	17.5	7.7	9.4	5.3	2.3	100.0
1991	1,152	0.0	0.1	3.0	3.9	3.0	29.3	13.9	15.0	13.4	7.3	6.3	4.8	100.0
1992	994	0.0	0.0	6.4	4.6	4.7	2.0	19.4	12.7	20.6	12.9	7.7	8.8	99.8
1993	1,263	0.0	0.7	2.3	16.9	10.5	5.8	3.9	20.0	10.1	13.6	8.4	7.9	100.1
1994	1,246	0.0	0.0	3.1	2.9	23.8	13.6	5.1	4.7	17.1	9.1	9.3	11.2	99.9
1995	1,398	0.0	0.1	5.4	8.4	2.1	24.4	14.7	5.0	5.3	18.5	7.1	9.0	100.0
1996	1,083	0.0	1.1	1.6	11.6	14.9	3.5	30.9	15.0	5.4	4.0	8.0	4.1	100.1

[a] Data from annual Age, Size, and Sex Composition ADF&G Technical Data and RIR Reports.
[b] Variable mesh test gill net samples include Kokechik Bay and Scammon Bay fish sampled combined.
[c] Number sampled shown are number of fish which could be aged.
[d] Totals may not equal 100% due to rounding errors.

Appendix F.14. Age composition of Pacific herring sampled from the commercial harvest, Cape Romanzof District, 1986-1996.







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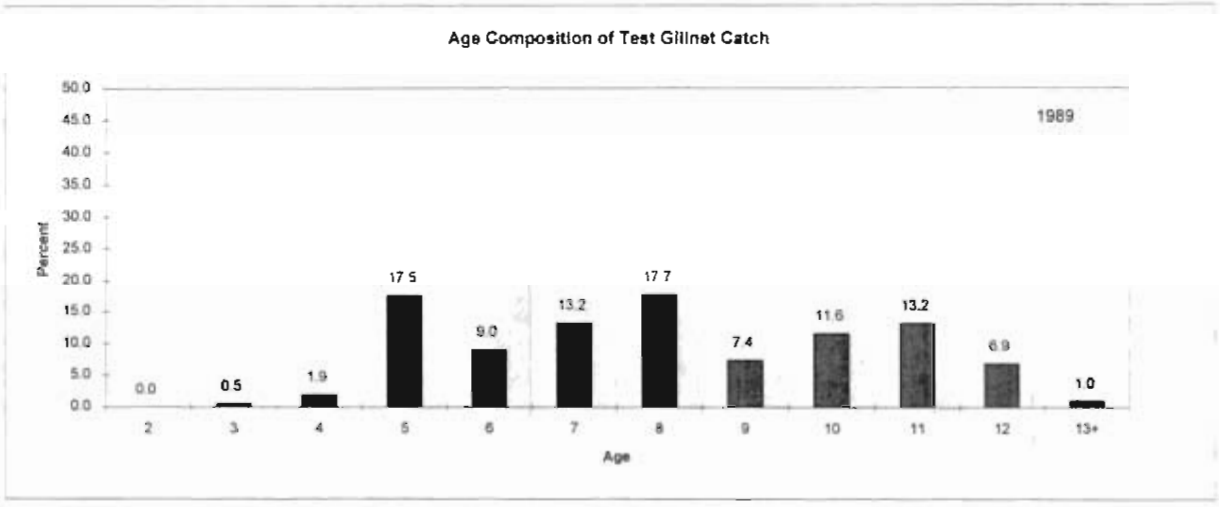
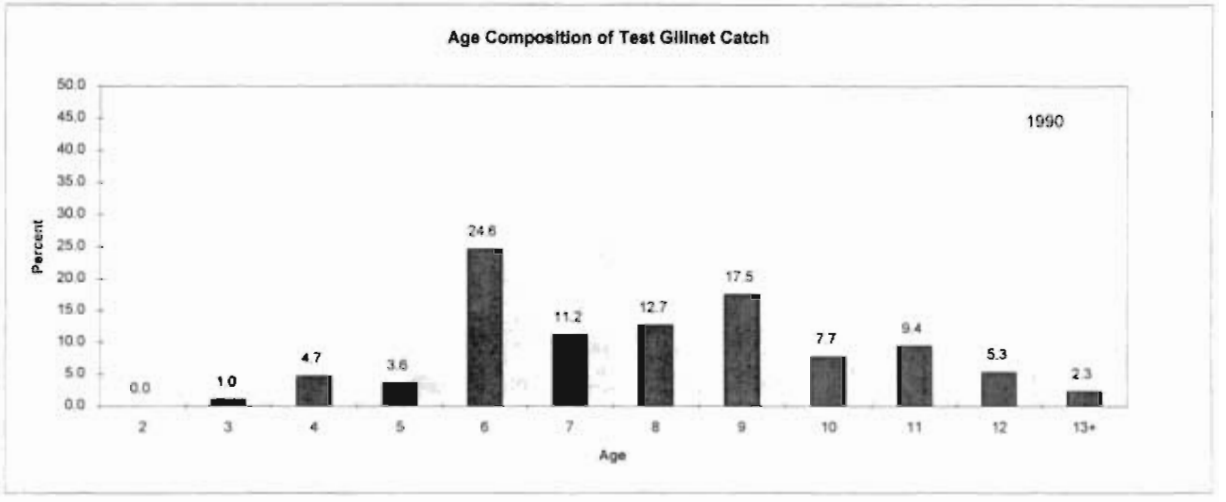
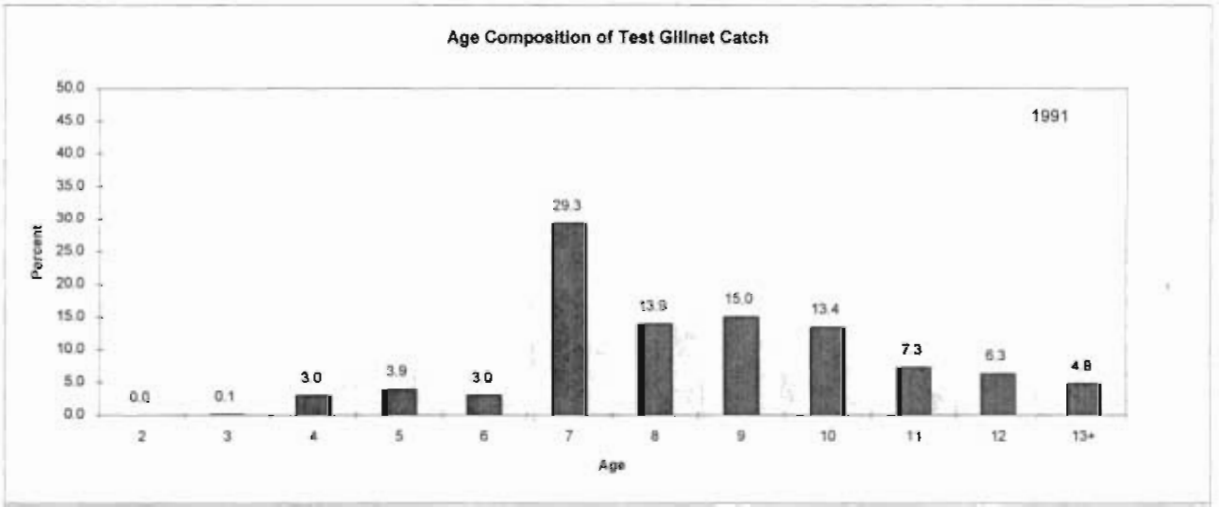
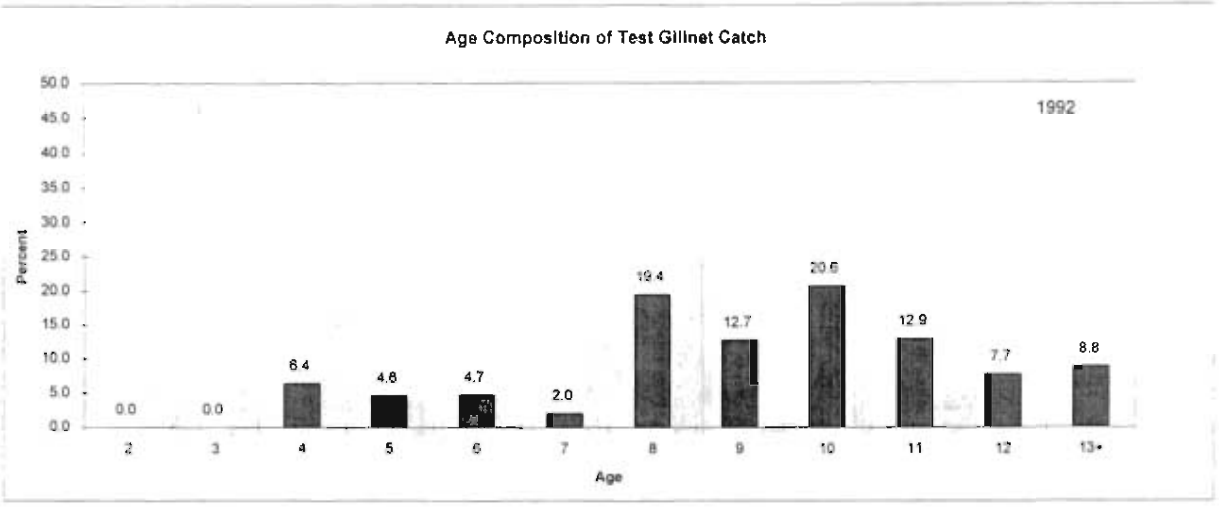
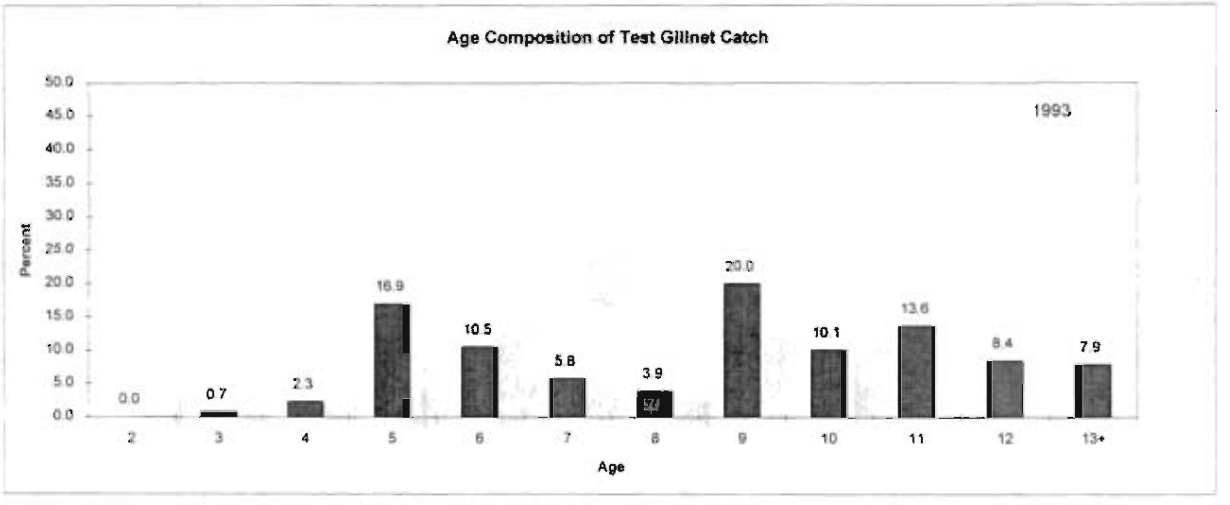

Age Composition of Test Gillnet Catch
1989
Percent
Age
0.0
0.5
1.9
17.5
9.0
13.2
17.7
7.4
11.6
13.2
6.9
1.0
2
3
4
5
6
7
8
9
10
11
12
13+

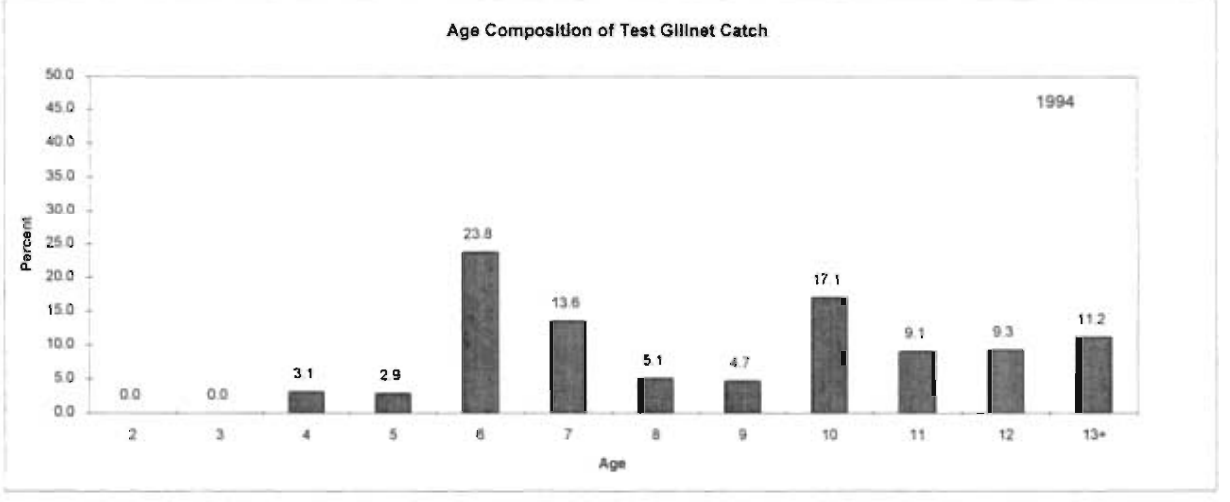

Age Composition of Test Gillnet Catch
1990
Percent
Age
0.0
1.0
4.7
3.6
24.6
11.2
12.7
17.5
7.7
9.4
5.3
2.3
2
3
4
5
6
7
8
9
10
11
12
13+


Age Composition of Test Gillnet Catch
1991
Percent
Age
0.0
0.1
3.0
3.9
3.0
29.3
13.9
15.0
13.4
7.3
6.3
4.8
2
3
4
5
6
7
8
9
10
11
12
13+

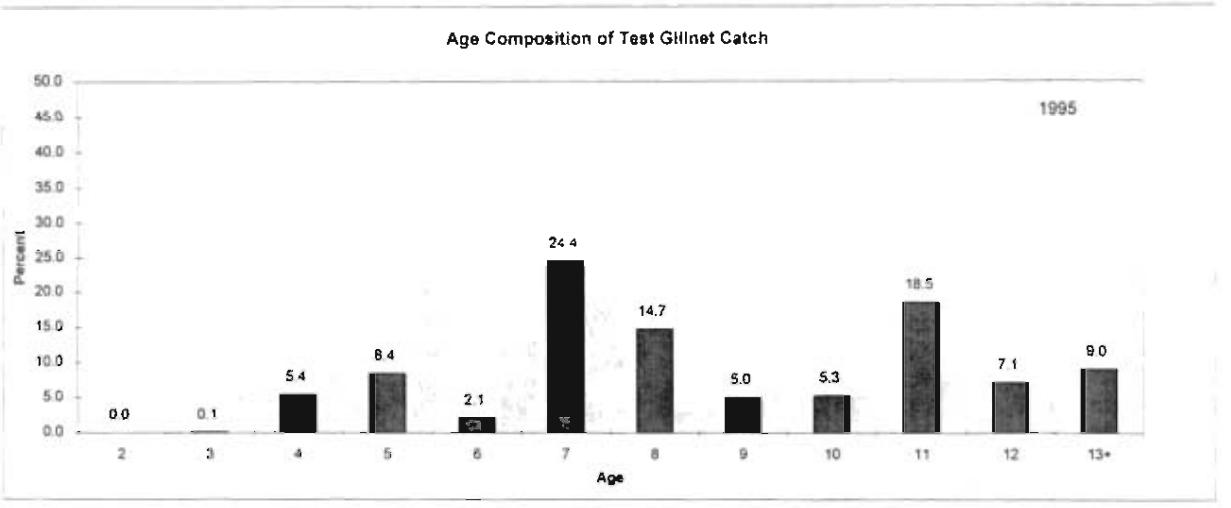
-Continued-

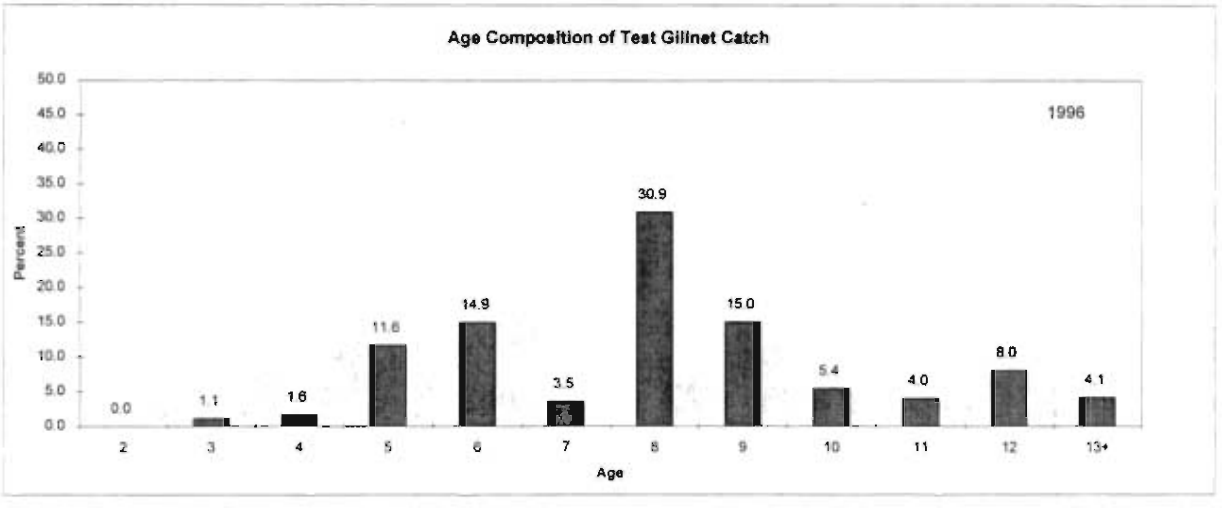

Age Composition of Test Gillnet Catch
1992
Percent
Age
0.0
0.0
6.4
4.8
4.7
2.0
19.4
12.7
20.6
12.9
7.7
8.8
2
3
4
5
6
7
8
9
10
11
12
13+


Age Composition of Test Gillnet Catch
1993
Percent
Age
0.0
0.7
2.3
16.9
10.5
5.8
3.9
20.0
10.1
13.6
8.4
7.9
2
3
4
5
6
7
8
9
10
11
12
13+


Age Composition of Test Gillnet Catch
1994
Percent
Age
0.0
0.0
3.1
2.9
23.8
13.6
5.1
4.7
17.1
9.1
9.3
11.2
2
3
4
5
6
7
8
9
10
11
12
13+

-Continued-


Age Composition of Test Gillnet Catch
1995
Percent
Age
0.0
0.1
5.4
8.4
2.1
24.4
14.7
5.0
5.3
18.5
7.1
9.0
2
3
4
5
6
7
8
9
10
11
12
13+


Age Composition of Test Gillnet Catch
1996
Percent
Age
0.0
1.1
1.6
11.6
14.9
3.5
30.9
15.0
5.4
4.0
8.0
4.1
2
3
4
5
6
7
8
9
10
11
12
13+

Appendix F.15. Herring spawn weight, cumulative weight and related data from artificial substrate, Cape Romanzof, 1996.

		Platforms 1-25					Platforms 26-40					Combined Sections			
Date	Time	Daily Weight (1g)	Cum. Weight (g)	Daily Prop	Cum. Prop	Platforms Not Visited	Daily Weight (1g)	Cum. Weight (g)	Daily Prop	Cum. Prop	Platforms Not Visited	Daily Weight (g)	Cum. Weight (g)	Daily Proportion	Cum. Proportion
10-May															
11-May															
12-May [a]		0	0	0.000	0 000	1-25	0	0	0.000	0.000	26-40	0	0	0.000	0.000
13-May [a]															
14-May	06:10	607	607	0.154	0.154		273	273	0.164	0.164	36-40	880	880	0.157	0.157
15-May	06:05	216	823	0.055	0.209		0	273	0.000	0.164		216	1,096	0.039	0.196
16-May	07:15	Trace	823	0.000	0.209		Trace	273	0.000	0.164		0	1,096	0.000	0.196
17-May	08:00	0	823	0.000	0.209		Trace	273	0.000	0.164		0	1,096	0.000	0.196
18-May	08:45	Trace	823	0.000	0.209		0	273	0.000	0.164		0	1,096	0.000	0.196
19-May	09:30	0	823	0.000	0.209		0	273	0.000	0.164		0	1,096	0.000	0.196
20-May	10:10	0	823	0.000	0.209		0	273	0.000	0.164		0	1,096	0.000	0.196
21-May	10:00	0	823	0.000	0.209		0	273	0.000	0.164		0	1,096	0.000	0.196
22-May	11:30	0	823	0.000	0.209		0	273	0.000	0.164		0	1,096	0.000	0.196
23-May	12:00	839	1,662	0.213	0.423		600	873	0.360	0.524		1,439	2,535	0.257	0.453
24-May	13:00	2,271	3,933	0.577	1.000		793	1,666	0.476	1.000		3,064	5,599	0.547	1.000
25-May	14:00	0	3,933	0.000	1.000		0	1,666	0.000	1.000		0	5,599	0.000	1.000
26-May	14:30	0	3,933	0.000	1.000		0	1,666	0.000	1.000		0	5,599	0.000	1.000
27-May	14:30	0	3,933	0.000	1.000		0	1,666	0.000	1.000		0	5,599	0.000	1.000
28-May [b]		0	3,933	0.000	1.000	1-25	0	1,666	0.000	1.000	26-40	0	5,599	0.000	1.000
29-May	17:00	0	3,933	0.000	1.000		0	1,666	0.000	1.000		0	5,599	0.000	1.000
30-May	17:10	0	3,933	0.000	1.000		0	1,666	0.000	1.000		0	5,599	0.000	1.000
31-May	07:00	0	3,933	0.000	1.000		0	1,666	0.000	1.000		0	5,599	0.000	1.000
01-Jun	07:00	0	3,933	0.000	1.000		0	1,666	0.000	1.000		0	5,599	0.000	1.000
02-Jun	08:05	0	3,933	0.000	1.000		0	1,666	0.000	1.000		0	5,599	0.000	1.000
03-Jun	08:25	0	3,933	0.000	1.000		0	1,666	0.000	1.000		0	5,599	0.000	1.000
04-Jun	10:45	0	3,933	0.000	1.000		0	1,666	0.000	1.000		0	5,599	0.000	1.000
05-Jun	11:00	0	3,933	0.000	1.000		0	1,666	0.000	1.000		0	5,599	0.000	1.000
06-Jun	13:45	0	3,933	0.000	1.000		0	1,666	0.000	1.000		0	5,599	0.000	1.000
07-Jun	12:30	0	3,933	0.000	1.000		0	1,666	0.000	1.000		0	5,599	0.000	1.000

[a] Platforms were not in place on May 12-13. No spawn was observed on May 12. On May 13 a light spawn occured. Spawn depostion was observed as far as approximate location of platform #25. Light spawn began at approximate location of platform #3 and continued until site of platform #25. Spawn was heaviest around point (site of platform #13-17) approximately 1 egg layer. In all other locations approximately .5 - 1 egg layers were observed.

[b] No survey on May 28 due to strong wind, high waves and water. Estimated zero spawn based on data collected on May 27 and 29.

Appendix F.16. Historical herring spawn deposition weight data from artificial substrate study, Cape Romanzof District, 1992-1996.

	Herring Spawn Weight in Grams		
Year	Platforms 1-25	Platforms 26-40	Total
1992	1,782	688	2,470
1993	1,718	1,736	3,454
1994	2,799	1,257	4,056
1995	3,111	1,874	4,985
1996	3,933	1,666	5,599
Average	2,669	1,444	4,113

APPENDIX G

YUKON AREA FRESHWATER FISHERIES

Appendix G.1. Estimated or reported subsistence harvest of pink salmon and other select miscellaneous fish species by surveyed villages, Yukon Area, 1996. a

	Harvest Strata Combined		Estimated Subsistence Harvest with Corresponding Confidence Intervals (Expanded to Estimate Survey Village Harvest)										Reported Numbers of Miscellaneous Fish Species, (Not Expanded)						
					Whitefish b														
			Pink Salmon		Large Whitefish		Small Whitefish		Pike		Sheefish								
Community	Total Households	Households Contacted	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Burbot	Lamprey	Tomcod	Grayling	Sucker	Arctic Char	Blackfish
Hooper Bay	177	45	3,212	2,075	666	820	3,456	2,116	864	842	69	120	22	0	1,665	0	0	4	16,680
Scammon Bay	79	21	305	399	324	238	935	526	892	583	27	31	50	0	1,665	0	0	0	1,400
Coastal District	*256*	*66*	*3,517*	*2,113*	*990*	*664*	*4,393*	*2,181*	*1,756*	*1,024*	*96*	*124*	*72*	*0*	*3,350*	*0*	*0*	*4*	*18,080*
Sheldon's Point	37	29	262	129	591	195	1,824	421	155	57	1,544	372	123	0	5	0	0	0	11,090
Alakanuk	137	27	35	52	488	367	2,178	1,387	259	197	738	611	12	0	50	0	0	0	4,760
Emmonak	161	72	46	0	1,392	438	4,505	1,222	1,348	481	2,338	805	458	0	1,099	0	0	0	58,982
Kotlik	98	34	100	0	1,445	536	3,941	2,073	915	389	6,469	3,003	84	0	25	0	0	0	12,810
District 1	*433*	*162*	*443*	*139*	*3,916*	*808*	*12,446*	*2,800*	*2,577*	*640*	*11,089*	*3,190*	*677*	*0*	*1,179*	*0*	*0*	*0*	*87,642*
Mountain Village	140	39	811	573	1,479	798	1,547	1,157	1,132	507	577	222	497	189	25	380	0	10	12,978
Pitkas Point	34	31	280	96	1,339	28	550	0	433	0	407	0	872	110	0	16	0	15	11,480
St. Mary's	124	41	42	27	3,541	3,201	1,493	1,098	5,229	3,390	656	434	600	889	0	37	0	0	1,350
Pilot Station	94	36	0	0	1,617	762	170	165	489	191	442	266	210	30	0	0	0	0	910
Marshall	65	23	0	0	2,054	1,978	1,068	1,328	2,499	1,144	1,180	975	629	900	0	7	1	7	5,040
District 2	*457*	*170*	*933*	*582*	*10,030*	*3,922*	*4,828*	*2,082*	*9,782*	*3,619*	*3,262*	*1,122*	*2,808*	*1,918*	*25*	*440*	*1*	*32*	*31,758*
Russian Mission	57	14	0	0	107	163	62	143	583	758	45	51	7	12	0	7	0	3	70
Holy Cross	84	17	140	175	172	203	80	0	95	67	38	32	12	0	0	30	0	0	140
Shageluk	42	17	40	0	1,118	647	578	318	212	69	93	25	32	0	0	5	10	10	0
District 3	*163*	*48*	*180*	*175*	*1,397*	*698*	*740*	*349*	*890*	*764*	*176*	*65*	*51*	*12*	*0*	*42*	*10*	*13*	*210*
Anvik	38	34	0	0	193	22	211	5	117	5	50	5	14	0	0	45	0	0	0
Grayling	64	19	4	2	243	205	0	0	264	129	149	63	7	2,700	0	41	61	7	7,702
Kaltag	51	22	0	0	10	0	247	333	40	45	35	28	0	0	0	7	0	19	0
Nulato	87	29	0	0	338	226	1,226	1,349	90	85	91	67	19	0	0	250	1	106	0
Koyukuk	43	11	0	0	585	599	175	0	183	179	81	59	50	0	0	0	0	0	0
Galena	137	35	52	0	3,192	1,507	2,129	807	113	27	288	167	190	0	0	92	63	28	360
Ruby	63	17	3	0	496	275	80	0	53	52	35	10	2	0	0	20	0	0	0
Huslia	70	19	0	0	253	95	435	139	598	189	124	38	9	0	0	20	3	0	0
Hughes	27	24	0	0	648	548	4,865	2,184	105	32	115	49	9,631	0	0	59	0	0	0
Allakaket	51	22	0	0	1,180	995	677	527	375	331	780	395	4	0	0	141	20	1	0
Alatna	13	8	0	0	40	0	360	0	45	50	6	0	0	0	0	33	0	0	0
Bettles	27	22	0	0	0	0	0	0	6	2	6	0	1	0	0	57	0	0	0
District 4	*671*	*262*	*59*	*2*	*7,178*	*2,025*	*10,205*	*2,714*	*1,969*	*460*	*1,760*	*449*	*9,927*	*2,700*	*0*	*765*	*146*	*161*	*8,062*
Tanana	110	50	0	0	2,557	430	2,972	822	108	30	969	116	10	0	0	47	2	0	0
Rampart	28	24	0	0	22	1	40	0	1	0	9	0	1	0	0	0	0	0	0
Stevens Village	29	21	0	0	23	10	13	10	75	21	5	2	0	0	0	0	1	0	0
Birch Creek	15	10	0	0	84	47	36	28	132	63	0	0	0	0	0	0	0	0	0
Beaver	35	28	0	0	39	11	3	2	48	34	20	9	3	0	0	27	0	0	0
Fort Yukon	203	52	0	0	859	977	889	1,079	1,256	710	512	415	44	0	0	28	29	0	0
Venetie	55	19	0	0	2	0	0	0	5	7	0	0	1	0	0	292	0	0	0
Chalkyitsik	29	26	0	0	2	1	1,121	168	279	19	25	5	60	0	0	23	0	0	0
District 5	*504*	*230*	*0*	*0*	*3,588*	*1,070*	*5,074*	*1,367*	*1,904*	*715*	*1,540*	*431*	*119*	*0*	*0*	*417*	*32*	*0*	*0*
Survey Totals	2,484	938	5,132	2,204	27,099	4,712	37,688	5,128	18,978	3,983	17,923	3,442	13,654	4,630	4,554	1,664	191	210	145,752

a Households contacted indicates the number of households with complete harvest information used in estimating the harvests, includes 95 percent confidence interval, CI (95%).
b Large whitefish are considered those 4 pounds or larger and small whitefish are less than 4 pounds.

Appendix G.2. Reported subsistence and personal use freshwater finfish harvested under the authority of a permit, listed by permit area, Yukon Area, 1996. a

Permit Fishing Area	Permit Type	Permit Issued	Permit Returned	Percent Returned	Number of Permits Returned that Fished	Reported Harvest: Whitefish	Sheefish	Burbot	Pike	Suckers	Grayling
Subsistence Use											
Yukon River near Haul Road Bridge	SY	47	45	96%	31	441	6	0	7	0	0
Yukon River near Circle and Eagle	SE	86	84	98%	51	550	61	1	36	636	274
Tanana River Subdistrict 6A	SA	26	24	92%	19	464	2	44	149	42	0
Tanana River Subdistrict 6B	SB	105	96	91%	59	792	14	18	212	7	0
Tanana River Upstream of Subdistrict 6C	SU	42	39	93%	15	2,693	0	10	75	104	26
Kantishna River Subdistrict 6A	SK	5	5	100%	4	57	1	6	17	27	0
Tolovana River Pike	ST	74	64	86%	24	389	41	26	1,616	141	15
Subsistence Permit Subtotals		385	357	93%	203	5,386	125	105	2,112	957	315
Personal Use											
Tanana River Subdistrict 6C	PC	129	125	97%	73	33	2	0	1	7	0
Tanana River Whitefish	PW	4	4	100%	3	55	0	0	0	192	0
Personal Use Permit Subtotals		133	129	97%	76	88	2	0	1	199	0
Permit Totals		518 b	486	94%	279 c	5,474	127	105	2,113	1,156	315

a Includes permit information received as of April 10, 1997.
b Includes 32 households that were issued permits for two different areas, including 21 Minto households who were issued both pike and salmon permits.
c Includes one household that fished in two different permit areas.

Appendix G.3. Commercial freshwater fishery catches, Lower Yukon Area, 1978-1996.

	Sheefish		Whitefish		Burbot		Pike	Lamprey	Blackfish
Year	Number	Pounds	Number	Pounds	Number	Pounds	Pounds	Pounds	Pounds
1978	0	0	19	87	0	0	0	0	0
1979	5	39	23	55	0	0	0	0	0
1980	283	2,265	78	250	0	0	0	0	293
1981	299	2,812	779	2,875	0	0	9	0	0
1982	754	6,161	1,633	6,214	102	482	0	0	0
1983	395	2,692	163	648	0	0	0	0	0
1984	94	762	794	2,362	0	0	0	0	0
1985	358	3,081	1,514	4,586	0	0	0	0	0
1986	0	0	1,533	5,845	0	0	0	80	0
1987	0	0	2,144	7,564	0	0	0	0	0
1988	0	0	696	2,171	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0
1990	0	0	180	260	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0
1992	0	0	95	640	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	157	471	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0

Appendix G.4. Colville River commercial whitefish catches, Northern Area, 1964-1996. a

Year	Broad Whitefish	Humpback Whitefish	Arctic Cisco ("kaktok")	Least Cisco ("herring")
1964	2,951 b		16,000	9,000
1965	3,000 b		50,000	
1966	2,500 b		40,000	
1967 g				
1968	3,130		42,055	18,180
1969 g				
1970	2,080 b		19,602	25,930
1971	3,815	132	38,016	22,713
1972	3,850	1,497	37,333	13,283
1973	2,161		71,569	25,188
1974	3,117	2,316	35,601	13,813
1975	2,201	1,946	28,291	20,778
1976	2,172	1,815	31,659	34,620
1977	443	1,431	31,796	14,961
1978 c	20 d	1,102	17,292	21,589
1979	d	1,831	8,684	24,984
1980	d	4,231	14,657	31,459
1981	1,035	469	38,206	16,584
1982	1,662	201	15,067 e	25,746 e
1983	d	408 d	18,162	35,322
1984	789	179	27,686	13,076
1985	401	191	23,679	17,595
1986 f	0	18	29,895	9,444
1987 f	5	1,989	24,769	10,922
1988	429	6,733	10,287	23,910
1989	71	6,575	17,877	23,303
1990	0	5,694	19,374	21,003
1991	0	1,240	13,805	5,697
1992	126	5,209	20,939	6,962
1993	20	5,339	31,310	6,037
1994	0	6,056	8,958	10,176
1995	0 h	5,973 h	13,236 l	0
1996 k	0 h	3,767 h	8,236 l	0

a Numbers reflect fish harvested with the intent of commercial sale.
b Includes small numbers of humpback whitefish.
c Also reported taken were 1 chinook, 2 sockeye, 9 chum, and 118 pink salmon.
d No fishing effort during June or July.
e No fishing effort during November or December.
f No fishing effort during July or December.
g No data available.
h Humpback and broad whitefish recorded only as whitefish on fish tickets.
l Includes undetermined numbers of least cisco.
k Includes only reported sales through March 6, 1997 and does not include all fish harvested in 1996 but sold after March 6, 1997.

Average weights: Broad whitefish 5.1 lbs.
Least cisco 0.9 lbs.
Arctic cisco 1.0 lbs.

Appendix G.5. Commercial freshwater fishery catches, Upper Yukon Area, 1971-1996. a

	Healy Lake		Lake Minichumina		Tanana River				Yukon River			
	Whitefish		Whitefish		Burbot		Whitefish		Burbot		Whitefish	
Year	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1971			3,277	9,831								
1972	2,605	3,950	718	2,154								
1973	2,187	3,915	1,697	5,037								
1974	1,885	3,390	854	2,562								
1975	1,357	2,375										
1976	1,440	2,625										
1977	-	-										
1978	-	-										
1979	1,336	2,306										
1980	data unavailable											
1981	no effort											
1982	no effort											
1983	no effort											
1984	no effort				-	76						
1985	no effort											
1986	no effort						72	-				
1987	no effort											
1988	no effort						837	-				
1989	no effort								1	-	-	2,070
1990	no effort		no effort		1	-	809	-	0	0	985	2,078
1991	no effort		no effort									
1992	no effort		0	0	0	0	0	0	0	0	0	0
1993	no effort											
1994	no effort		no effort		0	0	921	1,400	0	0	0	0
1995	no effort		no effort		0	0	0	0	0	0	0	0
1996	no effort		no effort		0	0	0	0	0	0	0	0

a Numbers reflect fish harvested with the intent of commercial sale.

Appendix G.6. Freshwater finfish sales during the commercial salmon fishing season, by district and period, Lower Yukon Area, 1996.

District 1

Period	Date	Number of Permits	Sheefish	Pounds
-	-	0	0	0

District 2

Period	Date	Number of Permits	Sheefish	Pounds
1	6/09-6/09	2	2	36
2	6/12-6/13	9	14	264
3	6/17-6/17	6	9	143
4	6/19-6/20	6	7	115
5	6/23-6/24	6	6	99
Subtotal		19	38	657

District 3

Period	Date	Number of Permits	Sheefish	Pounds
-	-	0	0	0

Lower Yukon Area

Total		19	38	657

Appendix G.7. Freshwater finfish sales during the commercial salmon fishing season, by district and period, Upper Yukon Area, 1996.

District 4

Period	Date	Number of Permits	Whitefish	Pounds
-	-	0	0	0

District 5

Period	Date	Number of Permits	Whitefish	Pounds
1	6/26-6/28	1	22	66
Subtotal		1	22	66

District 6

Period	Date	Number of Permits	Whitefish	Pounds
Early Season				
1	7/12-7/14	2	4	13
2	7/15-7/17	1	1	3
3	7/19-7/21	2	40	100
Subtotal			45	116
Late Season				
8	9/13-9/14	1	14	42
9	9/20-9/21	2	42	126
10	9/27-9/28	2	2	8
Subtotal		3	58	176
Total		3	103	292

Upper Yukon Area

Total		4	125	358

Appendix G.8. Freshwater finfish sales during the commercial salmon fishing season by district, Upper Yukon Area, 1988-1996.

	District 4		District 5				District 6	
	Whitefish		Whitefish		Sheefish		Whitefish	
Year	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1988	170	977	1,432	1,497	94	689	205	208
1989								
1990								
1991								
1992	2,635	2,455	580	1,379 [a]	0	0	199	499
1993	0	0	59	48	0	0	140	300
1994	1	4	108	215	0	0	209	433
1995	0	0	95	95	0	0	183	387
1996	0	0	22	66	0	0	103	292

[a] Sales of 950 pounds of whitefish did not include number of fish.

Attachment 1. Regulation changes adopted by the Alaska Board of Fisheries in March, 1996.

This summary of actions is limited to the three Yukon Area Agenda Change Requests addressed by the Alaska Board of Fisheries during the March 10 through March 19, 1996 meeting in Anchorage. *The following summary is for informational purposes only, and is not intended to detail, reflect, or fully interpret the reasons for the board's actions.*

Proposal 451. The description of the Yukon-Northern Area boundary was altered by moving the northern boundary of the Yukon Area from Canal Point light to Point Romanof.

> 5 AAC 05.100. DESCRIPTION OF AREA. The Yukon-Northern Area includes all waters of Alaska between the latitude of ~~Canal Point light~~ Point Romanof and the latitude of the westernmost point of the Naskonat Peninsula, including those waters draining into the Bering Sea, and all waters of Alaska north of a latitude of the westernmost tip of Point Hope and west of 1410 W. long., including those waters draining into the Arctic Ocean and the Chukchi Sea.

Agenda Change Request 2. In the managing of the Yukon River fall chum salmon directed subsistence fishery, the board adopted an Optimal Escapement Goal of 350,000 fall chum salmon in years of a Yukon River drainage fall chum salmon run greater than 350,000 fall chum salmon but less than or equal to 450,000 fall chum salmon. Additionally, in the managing of the fall chum salmon directed subsistence fishery, the board adopted an Optimal Escapement Goal of 375,000 fall chum salmon in years of a Yukon River drainage fall chum salmon run greater than 450,000 fall chum salmon but less than or equal to 550,000 fall chum salmon.

5 AAC 01.249. THE YUKON RIVER DRAINAGE FALL CHUM SALMON MANAGEMENT PLAN. The objective of the management plan contained in this section is to ensure adequate escapement of fall chum salmon into the Yukon River drainage and to provide management guidelines to the department. The commissioner shall, by emergency order, implement this plan during the period from July 16 - December 31 each year, as follows:

> (1) the department shall use the best available data including preseason projections, mainstem river sonar passage estimates, test fisheries indices, subsistence and commercial fishing reports and passage estimates from escapement monitoring projects to assess the run size for the purpose of implementing this plan;
> (2) when the projected run size is 350,000 chum salmon or less,
>
> > (A) the department shall close the commercial, sport, and personal use directed chum salmon fisheries; and
> > (B) the department shall close the subsistence directed chum salmon fisheries except that if indicators suggest that an individual escapement goal in a subdistrict, district, or a portion of a subdistrict or district will be achieved, the commissioner may, by emergency order, allow a subsistence directed chum salmon fishery in that subdistrict, district, or portion of the subdistrict or district;
>
> (3) when the projected run size is more than 350,000 but not more than 450,000 chum salmon,
>
> > (A) the targeted drainagewide optimal escapement goal is 350,000 chum salmon; and
> > (B) the department shall close the commercial, sport, and personal use directed chum salmon fisheries; and

(C) the department shall manage the subsistence chum salmon directed fisheries to achieve the targeted drainagewide optimal escapement goal, except that if indicators suggest that an individual escapement goal and identified subsistence needs in a subdistrict, district, or a portion of a subdistrict or district will be achieved, the commissioner may, by emergency order, allow a less restrictive subsistence directed chum salmon fishery in that subdistrict. district, or portion of the subdistrict or district;

(4) when the projected run size is more than 450,000 but not more than 550,000 chum salmon,

(A) the targeted drainagewide optimal escapement goal is 375,000 chum salmon; and
(B) the department shall close the commercial, sport, and personal use directed chum salmon fisheries; and
(C) the department shall manage the subsistence chum salmon directed fisheries to achieve the targeted drainagewide optimal escapement goal, except that if indicators suggest that an individual escapement goal and identified subsistence needs in a subdistrict, district, or a portion of a subdistrict or district will be achieved, the commissioner may, by emergency order, allow a less restrictive subsistence directed chum salmon fishery in that subdistrict, district, or portion of the subdistrict or district;

(5) when the projected run size is more than 550,000 but not more than 600,000 chum salmon,

(A) the targeted drainagewide escapement goal is 400,000 chum salmon; and
(B) the department shall close the commercial, sport, and personal use directed chum salmon fisheries, except that if indicators suggest that an individual escapement goal and identified subsistence needs in a subdistrict, district, or a portion of a subdistrict or district will be achieved, the commissioner may, by emergency order, allow a sport, or personal use fishery in that subdistrict, district, or portion of the subdistrict or district; and
(C) the department shall manage the subsistence chum salmon directed fisheries to achieve the targeted drainagewide escapement goal, except that if indicators suggest that an individual escapement goal and identified subsistence needs in a subdistrict, district, or a portion of a subdistrict or district will be achieved, the commissioner may, by emergency order, allow a less restrictive subsistence directed chum salmon fishery in that subdistrict, district, or portion of the subdistrict or district;

(6) when the projected run size is more than 600,000 chum salmon,

(A) the targeted drainagewide escapement goal is 400,000 or more chum salmon; and
(B) the department may open a subsistence fishery to the fishing seasons and periods specified in 5 AAC 01.210 and 5 AAC 05.367, open a personal use fishery of up to 84 hours of fishing per week, and open a sport fishery to allow for the retention of chum salmon; and
(C) when the projected run size is more than 600,000 chum salmon, but not more than 650,000 chum salmon, the department shall close the commercial directed chum salmon fisheries, except that if indicators suggest that an individual escapement goal and identified subsistence needs in a subdistrict, district, or a portion of a subdistrict or district will be achieved, the commissioner may, by emergency order, allow a commercial fishery in that subdistrict, district, or portion of the subdistrict or district;
(D) when the projected run size is more than 650,000 chum salmon, the department may allow for a commercial fishery with the harvest distribution by district or subdistrict

proportional to the guideline harvest range established in 5 AAC 05.365; the department shall distribute the harvest levels below the low end of the guideline harvest range by district or subdistrict proportional to the mid-point of the guideline harvest range;

(7) the provisions of this section do not apply after December 31, 1997. 5 AAC 01.249.

Agenda Change Request 8. The commercial summer chum salmon roe cap for the Anvik River was increased from 50,000 pounds to 100,000 pounds of summer chum salmon roe. In addition, the limit to the number of chum salmon or summer chum salmon roe sold by a permit per period was increased.

5 AAC 05.368. ANVIK RIVER CHUM SALMON FISHERY MANAGEMENT PLAN.

(4) no more than ~~50,000~~ 100,000 pounds of summer chum salmon roe from the Anvik River may be sold annually. However, if this cap is reached, fishing effort may continue, but only the sale of chum salmon in the round will be allowed;

(6) in the Anvik River, during periods specified by the department, a CFEC permit holder may not sell more than ~~600~~ 1,000 chum salmon in-the-round or ~~400~~ 700 pounds of chum salmon roe per commercial fishing period;

(7) this section is repealed April 30, 1998.